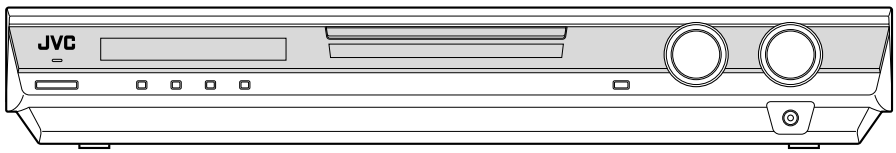
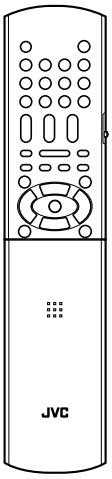
JVC

HOME THEATER RECEIVER

RX-F10S





DOLBY DIGITAL • EX PRO LOGIC II

dts 96/24 ES NEO:6

AV COMPU LINK

INSTRUCTIONS

For Customer Use:

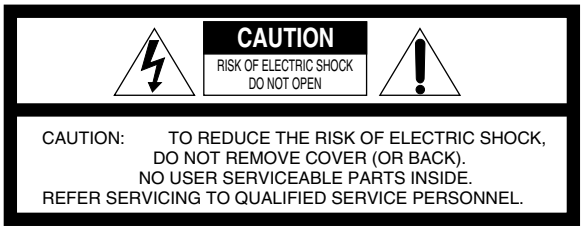
Enter below the Model No. and Serial No. which are located either on the rear, bottom or side of the cabinet. Retain this information for future reference.

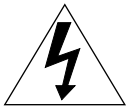
Model No. _____

Serial No. _____

LVT1163-001A
[J]

Warnings, Cautions, and Others
Mises en garde, précautions et indications diverses


CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with arrowhead symbol, within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION
To reduce the risk of electrical shocks, fire, etc.:
1. Do not remove screws, covers or cabinet.
2. Do not expose this appliance to rain or moisture.

ATTENTION
Afin d'éviter tout risque d'électrocution, d'incendie, etc.:
1. Ne pas enlever les vis ni les panneaux et ne pas ouvrir le coffret de l'appareil.
2. Ne pas exposer l'appareil à la pluie ni à l'humidité.

Caution—⏻/I STANDBY/ON button!
Disconnect the mains plug to shut the power off completely. The ⏻/I STANDBY/ON button in any position does not disconnect the mains line. The power can be remote controlled.

Attention—Touche ⏻/I STANDBY/ON!
Déconnectez la fiche d'alimentation secteur pour couper l'alimentation complètement. La touche ⏻/I STANDBY/ON, dans n'importe quelle position, ne déconnecte pas le système du secteur. L'alimentation ne peut pas être télécommandé.

For U.S.A

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.
This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
Reorient or relocate the receiving antenna.
Increase the separation between the equipment and receiver.
Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
Consult the dealer or an experienced radio/TV technician for help.

Note to CATV system installer:
This reminder is provided to call the CATV system installer's attention to Section 820-40 of the NEC which provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

For Canada/pour le Canada

CAUTION: TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT
ATTENTION: POUR EVITER LES CHOCS ELECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQUAU FOND

For Canada/pour Le Canada

THIS DIGITAL APPARATUS DOES NOT EXCEED THE CLASS B LIMITS FOR RADIO NOISE EMISSIONS FROM DIGITAL APPARATUS AS SET OUT IN THE INTERFERENCE-CAUSING EQUIPMENT STANDARD ENTITLED "DIGITAL APPARATUS," ICES-003 OF THE DEPARTMENT OF COMMUNICATIONS.
CET APPAREIL NUMERIQUE RESPECTE LES LIMITES DE BRUITS RADIOELECTRIQUES APPLICABLES AUX APPAREILS NUMERIQUES DE CLASSE B PRESCRITES DANS LA NORME SUR LE MATERIEL BROUILLEUR; "APPAREILS NUMERIQUES", NMB-003 EDICTEE PAR LE MINISTRE DES COMMUNICATIONS.

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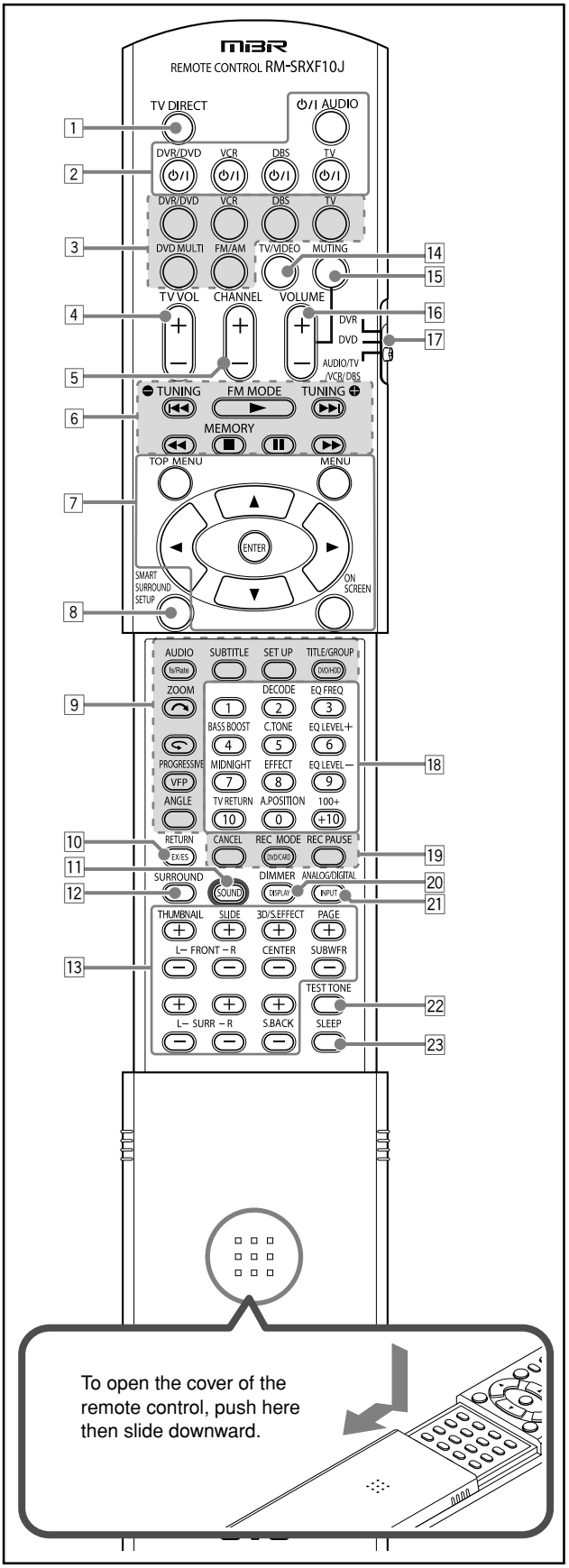
Parts identification



Remote control

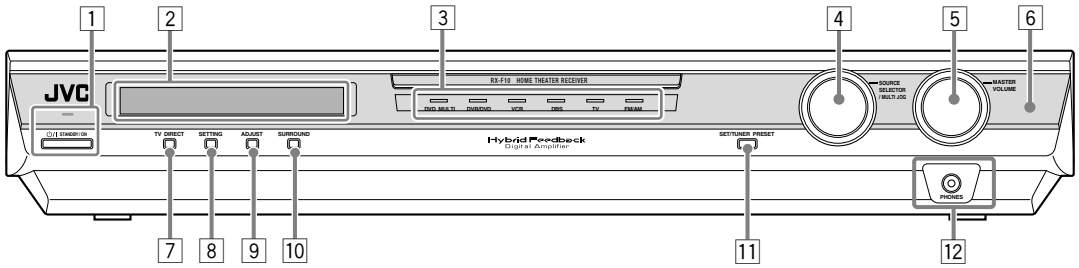
See pages in parentheses for details.

1 TV DIRECT button (14)
2 Standby/on buttons (12, 14, 34 – 38)
⏻/I AUDIO, DVR/DVD ⏻/I, VCR ⏻/I, DBS ⏻/I, TV ⏻/I
3 Source selecting buttons (12, 14, 25, 34, 36 – 38)
DVR/DVD, VCR, DBS, TV, DVD MULTI, FM/AM
4 TV VOL (volume) +/– button (34, 36)
5 CHANNEL +/– button (34 – 38)
6 • Operating buttons for video components (34, 35, 37, 38)
⏮, ▶, ⏭, ◀◀, ■, ⏸, ▶▶
• Operating buttons for tuner (25, 26)
⊖ TUNING, FM MODE, TUNING ⊕, MEMORY
7 Operating buttons for DVD recorder or DVD player* (35, 38)
TOP MENU, MENU, cursor buttons (►, ◄, ▲, ▼), ENTER, ON SCREEN
8 SMART SURROUND SETUP button (16)
9 Operating buttons for DVD recorder or DVD player* (35)
fs/Rate, AUDIO, SUBTITLE, SET UP, DVD/HDD, TITLE/GROUP, ↷, ZOOM, ↶, VFP, PROGRESSIVE, ANGLE
10 • EX/ES button (20)
• RETURN* button (35)
11 SOUND button (13, 14, 20, 23, 24)
12 SURROUND button (31)
13 • Adjusting buttons for speaker and subwoofer output levels (23)
FRONT L +/–, FRONT R +/–, CENTER +/–, SUBWFR +/–, SURR L +/–, SURR R +/–, S.BACK +/–
• Operating buttons for DVD recorder or DVD player* (35)
THUMBNAIL, SLIDE, 3D/S.EFFECT, PAGE
14 TV/VIDEO button (34, 36)
15 MUTING button (15)
16 VOLUME +/– button (13)
17 Mode selector (12, 14, 16, 20, 23 – 25, 31, 34 – 38)
DVR, DVD, AUDIO/TV/VCR/DBS
18 • Numeric buttons (26, 34 – 38)
• Adjusting buttons (13, 14, 20, 23, 24)
DECODE, EQ FREQ, BASS BOOST, C.TONE, EQ LEVEL +, MIDNIGHT, EFFECT, EQ LEVEL –, A.POSITION
• TV RETURN button (34)
19 Operating buttons for DVD recorder or DVD player* (35)
CANCEL, DVD/CARD, REC MODE, REC PAUSE
20 • DISPLAY* button (35)
• DIMMER button (15, 35)
21 ANALOG/DIGITAL INPUT button (12)
22 TEST TONE button (23)
23 SLEEP button (15)

* These buttons can be used for operating a JVC DVD recorder or DVD player with the mode selector set to “DVR” or “DVD” (see page 35).
If these buttons do not function normally, use the remote control supplied with your DVD recorder or DVD player. Refer also to the manuals supplied with the DVD recorder or DVD player for details.

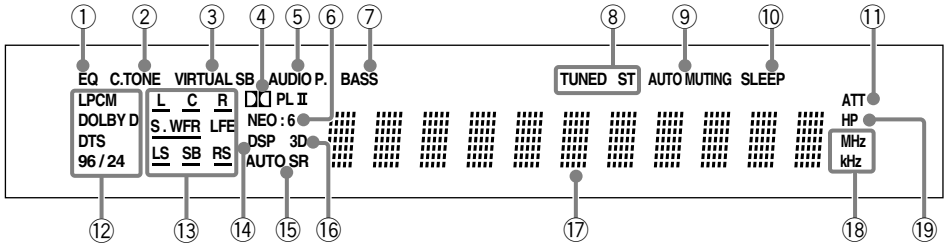
- **When operating the receiver, set the mode selector (17) to “AUDIO/TV/VCR/DBS.”**
- **When operating a JVC DVD recorder, set the mode selector (17) to “DVR.”**
- **When operating a JVC DVD player, set the mode selector (17) to “DVD.”**

Front panel



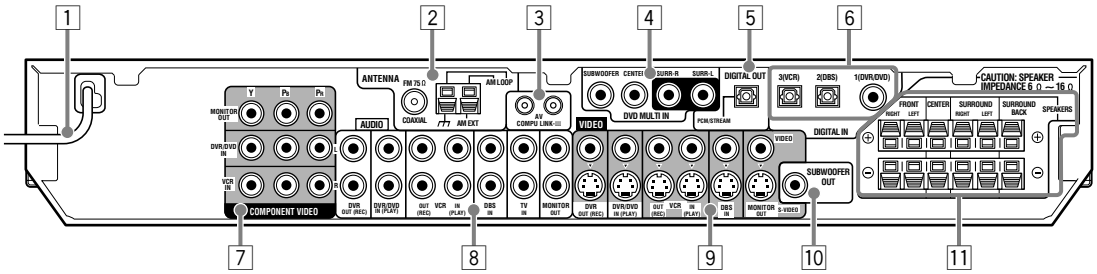
1 ⏻/I STANDBY/ON button and standby lamp (12, 14)
2 Display window (see below)
3 Source lamps
DVD MULTI, DVR/DVD, VCR, DBS, TV, FM/AM
4 • SOURCE SELECTOR (12, 14, 26)
• MULTI JOG (18, 22, 26, 31)
5 MASTER VOLUME control (13)
6 Remote sensor (4)
7 TV DIRECT button (14)
8 SETTING button (18)
9 ADJUST button (22)
10 SURROUND button (31)
11 • SET button (18, 22)
• TUNER PRESET button (26)
12 PHONES jack (13)

Display window



① EQ indicator (24)
② C.TONE indicator (23)
③ VIRTUAL SB indicator (30)
④ PL II indicator (27, 29)
⑤ AUDIO P. (position) indicator (14)
⑥ NEO:6 indicator (28)
⑦ BASS indicator (24)
⑧ Tuner operation indicators (25)
TUNED, ST (stereo)
⑨ AUTO MUTING indicator (26)
⑩ SLEEP indicator (15)
⑪ ATT (attenuator) indicator (24)
⑫ Digital signal format indicators (13, 27, 28)
LPCM (Linear PCM), DOLBY D (Dolby Digital), DTS, 96/24
⑬ Signal and speaker indicators (15)
⑭ DSP indicator (28, 29)
⑮ AUTO SR (surround) indicator (21)
⑯ 3D indicator (28, 29)
⑰ Main display
⑱ Frequency unit indicators
MHz (for FM station), kHz (for AM station)
⑲ HP (headphones) indicator (13, 28, 29)

Rear panel



1 Power cord (11)
2 ANTENNA terminals (5)
3 AV COMPU LINK-III terminals (32)
4 DVD MULTI IN jacks (8)
SUBWOOFER, CENTER, SURR-R, SURR-L
5 DIGITAL OUT terminal (11)
6 DIGITAL IN terminals (11)
• Coaxial: 1(DVR/DVD)
• Optical: 2(DBS), 3(VCR)
7 COMPONENT VIDEO (Y, P_B, P_R) jacks (7 – 10)
MONITOR OUT, DVR/DVD IN, VCR IN
8 AUDIO jacks (7 – 10)
• Input: DVR/DVD IN (PLAY), VCR IN (PLAY), DBS IN, TV IN
• Output: DVR OUT (REC), VCR OUT (REC), MONITOR OUT
9 VIDEO terminals (7 – 10)
VIDEO (composite video) jacks, S-VIDEO terminals
• Input: DVR/DVD IN (PLAY), VCR IN (PLAY), DBS IN
• Output: DVR OUT (REC), VCR OUT (REC), MONITOR OUT
10 SUBWOOFER OUT jack (6)
11 SPEAKERS terminals (6)
FRONT, CENTER, SURROUND, SURROUND BACK

Getting started

Before Installation

General precautions

- Be sure your hands are dry.
- Turn the power off to all components.
- Read the manuals supplied with the components you are going to connect.

Locations

- Install the receiver in a location that is level and protected from moisture and dust.
- The temperature around the receiver must be between –5˚C and 35˚C (23˚F and 95˚F).
- Make sure there is good ventilation around the receiver. Poor ventilation could cause overheating and damage the receiver.
- Leave sufficient distance between the receiver and the TV.

Handling the receiver

- Do not insert any metal object into the receiver.
- Do not disassemble the receiver or remove screws, covers, or cabinet.
- Do not expose the receiver to rain or moisture.
- Do not pull on the power cord to unplug the cord. When unplugging the cord, always grasp the plug so as not to damage the cord.
- When you are away on travel or otherwise for an extended period or time, remove the plug from the wall outlet. A small amount of power is always consumed while the power cord is connected to the wall outlet.

The receiver has a built-in cooling fan which operates while the receiver is turned on. Be sure to leave enough ventilation to obtain sufficient cooling effect.

CAUTION:

Do not connect the AC power plug to the wall outlet until all connections are completed.

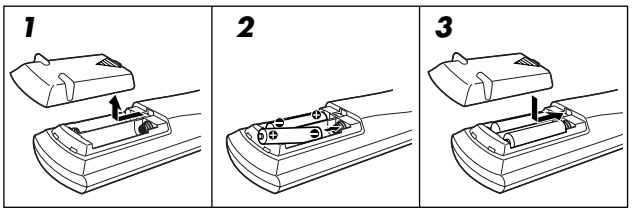
Checking the supplied accessories

Check to be sure you have all of the following supplied accessories. If anything is missing, contact your dealer immediately.

- Remote control (× 1)
- Batteries (× 2)
- AM loop antenna (× 1)
- FM antenna (× 1)
- Digital coaxial cable (× 1)

Putting batteries in the remote control

Before using the remote control, put two supplied batteries first.



1 Press and slide the battery cover on the back of the remote control.

2 Insert batteries.

Make sure to match the polarity: (+) to (+) and (–) to (–).

3 Replace the cover.

If the range or effectiveness of the remote control decreases, replace the batteries. Use two R6(SUM-3)/AA(15F) type dry-cell batteries.

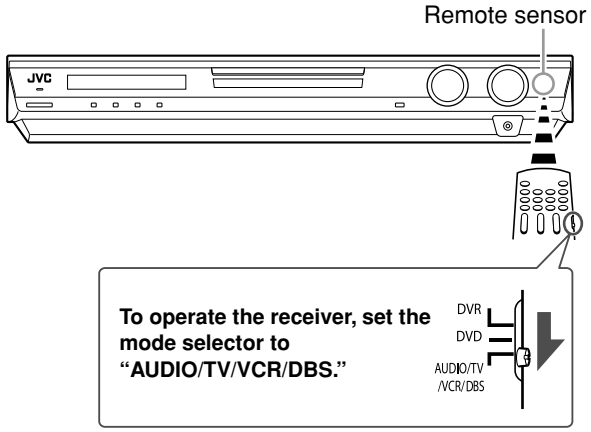
- Supplied butteries are for initial setup. Replace for continued use.

CAUTION:

Follow these precautions to avoid leaking or cracking cells:

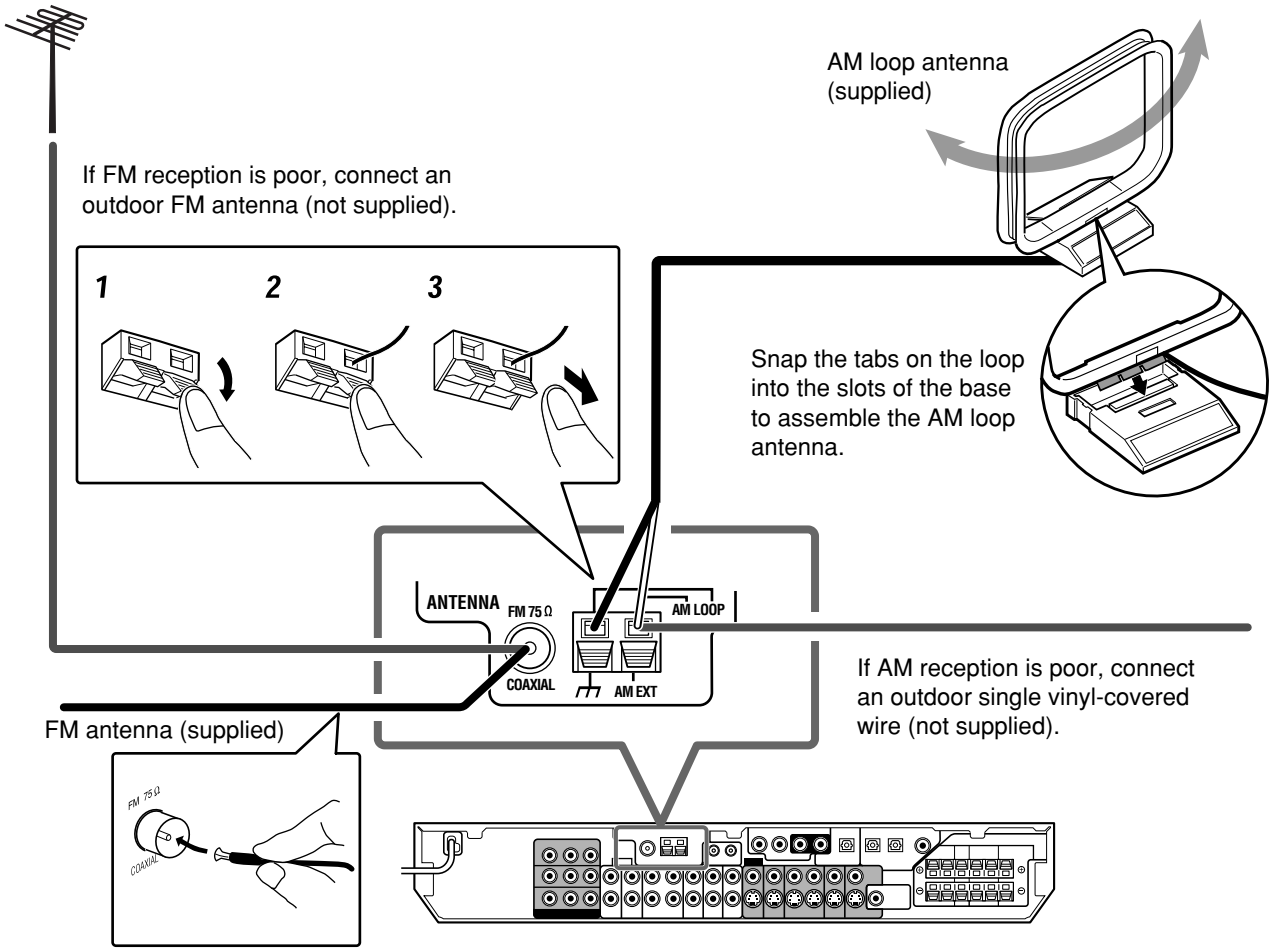
- Place batteries in the remote control so they match the polarity: (+) to (+) and (–) to (–).
- Use the correct type of batteries. Batteries that look similar may differ in voltage.
- Always replace both batteries at the same time.
- Do not expose batteries to heat or flame.

When using the remote control, aim the remote control directly at the remote sensor on the front panel.



Connecting the FM and AM antennas

Do not connect the AC power plug to the wall outlet until all connections are completed.



AM antenna connection

Connect the AM loop antenna supplied to the AM LOOP terminals. Connect the white cord to the AM EXT terminal, and connect the black cord to the ⏚ terminal.
Turn the loop until you have the best reception.

- If the reception is poor, connect an outdoor single vinyl-covered wire (not supplied) to the AM EXT terminal. Keep the AM loop antenna connected.

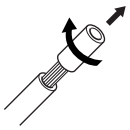
FM antenna connection

Connect the FM antenna supplied to the FM 75 Ω COAXIAL terminal as a temporary measure.
Extend the supplied FM antenna horizontally.

- If the reception is poor, connect an outdoor FM antenna (not supplied). Before attaching a 75 Ω coaxial cable with a connector, disconnect the supplied FM antenna.

NOTES

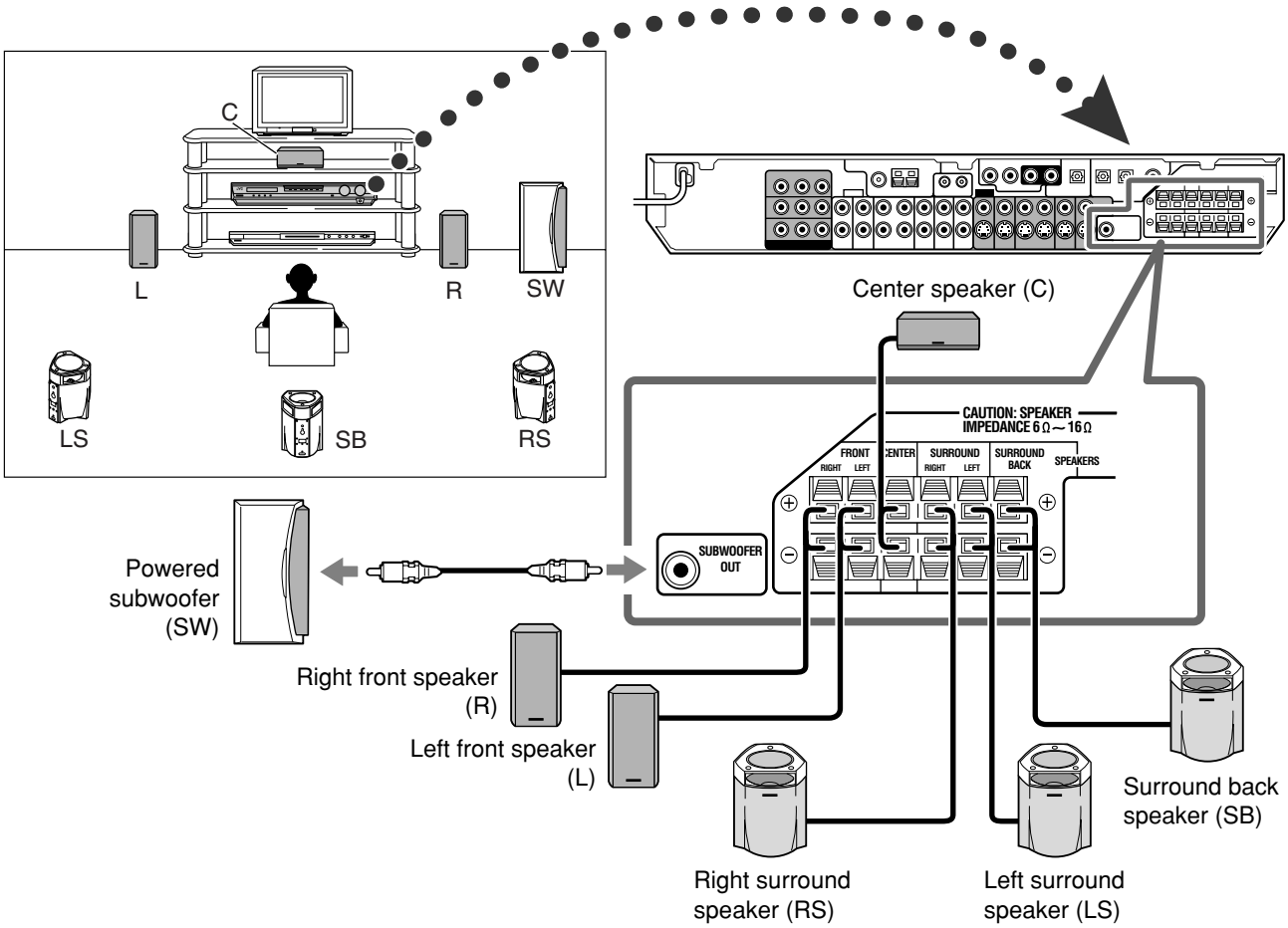
- If the AM loop antenna wire is covered with vinyl, remove the vinyl while twisting it as shown on the right.
- Make sure the antenna conductors do not touch any other terminals, connecting cords and power cord. This could cause poor reception.



Connecting the speakers

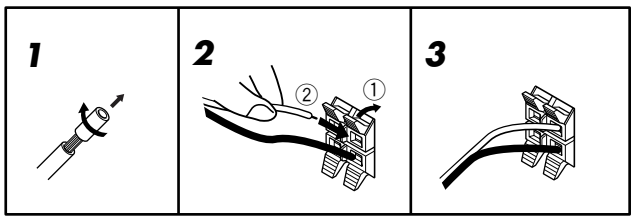
Do not connect the AC power plug to the wall outlet until all connections are completed.

Speaker Layout Diagram



Connecting the speakers

Turn off all components before making connections.



1 **Twist and remove the insulation at the end of each speaker cord.**

2 **Press and hold the clamp of the speaker terminal (①), then insert the speaker cord (②).**

- For each speaker, connect the (+) and (–) terminals on the rear panel to the (+) and (–) terminals marked on the speakers.

3 **Release the finger from the clamp.**

CAUTIONS:

- Use speakers with the SPEAKER IMPEDANCE indicated by the speaker terminals (6 Ω – 16 Ω).
- DO NOT connect more than one speaker to one speaker terminal.

Connecting the powered subwoofer

By connecting a subwoofer, you can enhance the bass or reproduce the original LFE signals recorded in digital software.

Connect the input jack of a powered subwoofer to the SUBWOOFER OUT jack on the rear panel, using a cord with RCA pin plugs (not supplied).

- Refer also to the manual supplied with your subwoofer.

After connecting all the speakers and/or a subwoofer, set the speaker setting information properly to obtain the best possible surround effect. For details, see pages 16 to 19.

NOTE

You can place a subwoofer wherever you like since bass sound is non-directional. Normally place it in front of you.

Connecting video components

Do not connect the AC power plug to the wall outlet until all connections are completed.

This receiver is equipped with the following video terminals—composite video, S-video, and component video terminals.

- If your video components have S-video (Y/C-separation) and/or component video (Y, P_B, P_R) jacks, connect them using an S-video cable (not supplied) or component video cable (not supplied). By using these terminals, you can get a better picture quality in the order:

Component > S-video > Composite

IMPORTANT:

The video signals from one type of these input jacks are transmitted only through the video output jacks of the same type. Therefore, if a recording video component and a playing video component are connected to the receiver through the video terminals of different type, you cannot record the picture. In addition, if the TV and a playing video component are connected to the receiver through the video terminals of different type, you cannot view the playback picture on the TV.

Turn off all components before making connections.

- When you connect other components, refer also to their manuals.

DO NOT use a TV through a VCR or a TV with a built-in VCR; otherwise, the picture may be distorted.

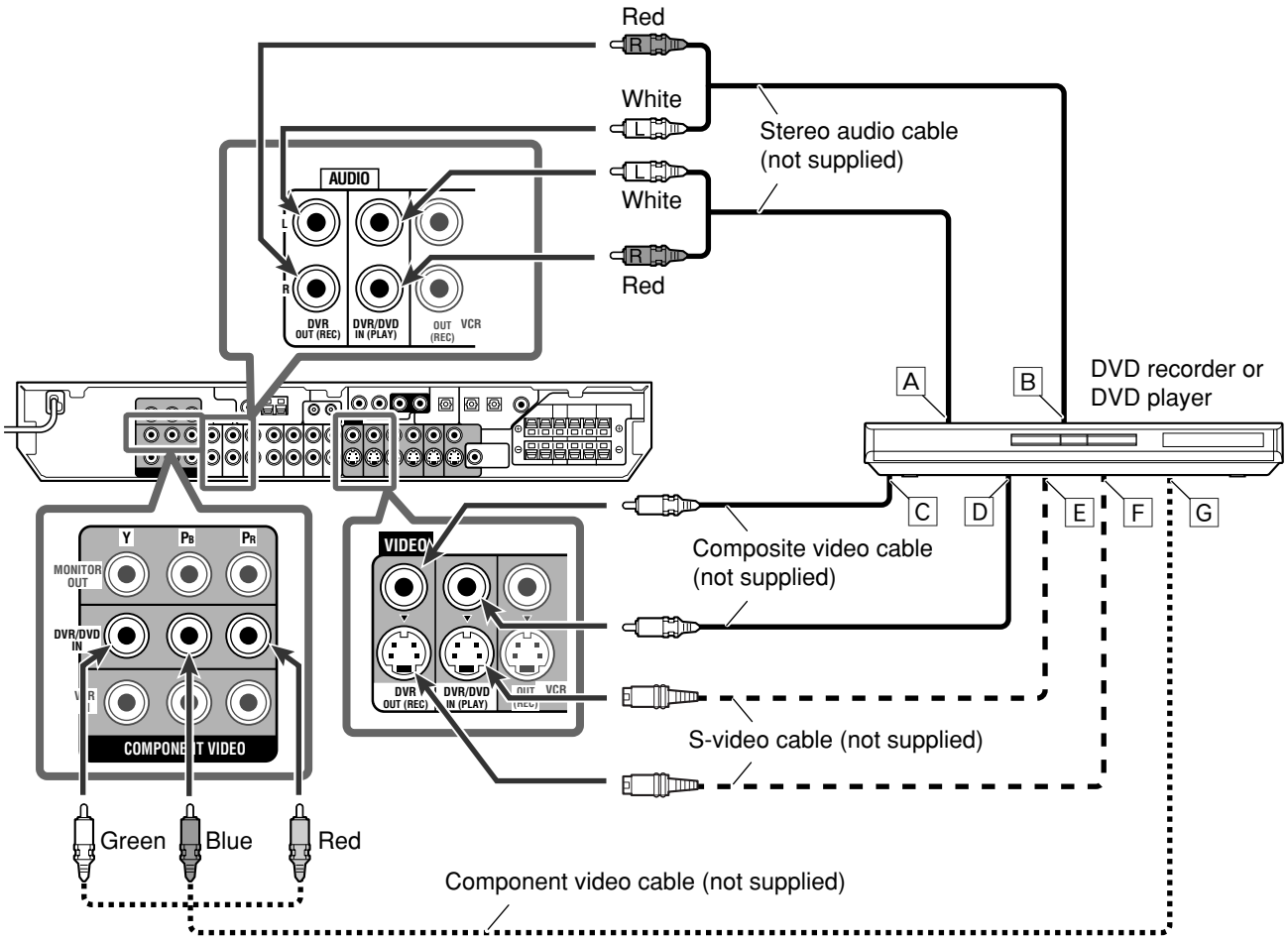
CAUTION:

If you connect a sound-enhancing device such as a graphic equalizer between the source components and this receiver, the sound output through this receiver may be distorted.

If your video components have AV COMPU LINK terminal

See also page 32 for detailed information about the connection and the AV COMPU LINK remote control system.

■ Connecting a DVD recorder or DVD player with its stereo output jacks:



NOTE

When connecting a DVD recorder or DVD player to the component video input jacks, make the component video input setting (DVD VIDEO) correctly for AV COMPU LINK remote control system. See page 21 for details.

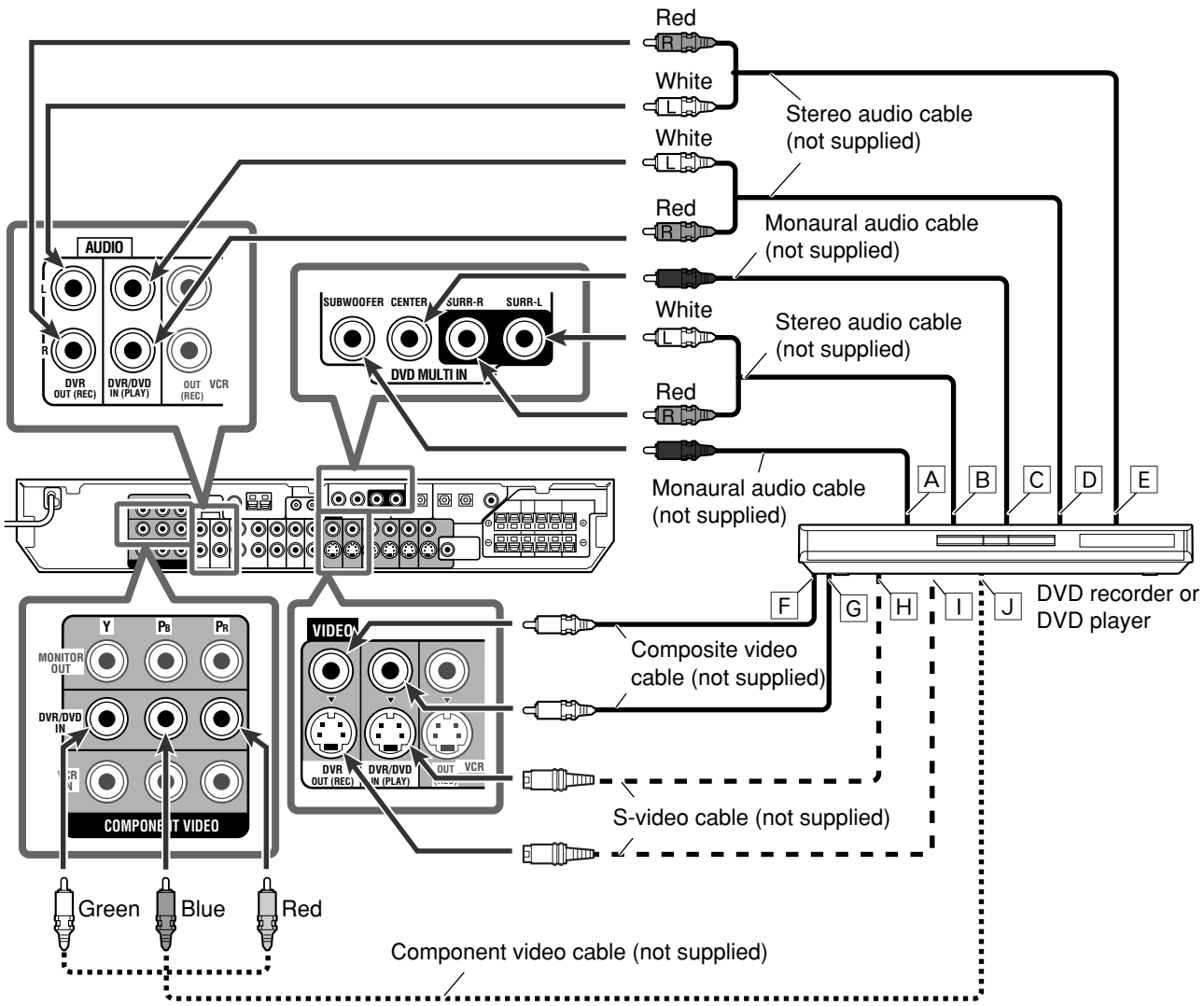
- A To left/right audio channel output
- B **Only for DVD recorder:** To left/right audio channel input
- C **Only for DVD recorder:** To composite video input
- D To composite video output
- E To S-video output
- F **Only for DVD recorder:** To S-video input
- G To component video output
  - Connect Y, P_B, and P_R correctly.

■ Connecting a DVD recorder or DVD player with its analog discrete output jacks (DVD MULTI IN):

This connection is the best connection method for enjoying DVD Audio sounds. When a DVD Audio disc is played back, the original high-quality sounds can be reproduced only using this connection.

Turn off all components before making connections.

- When you connect other components, refer also to their manuals.



NOTE

When connecting a DVD recorder or DVD player to the component video input jacks, make the component video input setting (DVD VIDEO) correctly for AV COMPU LINK remote control system. See page 21 for details.

- A To subwoofer output
- B To left/right surround channel audio output
- C To center channel audio output
- D To left/right front channel audio output
- E **Only for DVD recorder:** To left/right front channel audio input
- F **Only for DVD recorder:** To composite video input
- G To composite video output
- H To S-video output
- I **Only for DVD recorder:** To S-video input
- J To component video output
  - Connect Y, P_B, and P_R correctly.

About "DVD MULTI"

When you select "DVD MULTI" as the source (see page 12), you can enjoy analog discrete output sound (5.1-channel reproduction) from the connected component.

- You may need to select analog discrete output mode on the component.

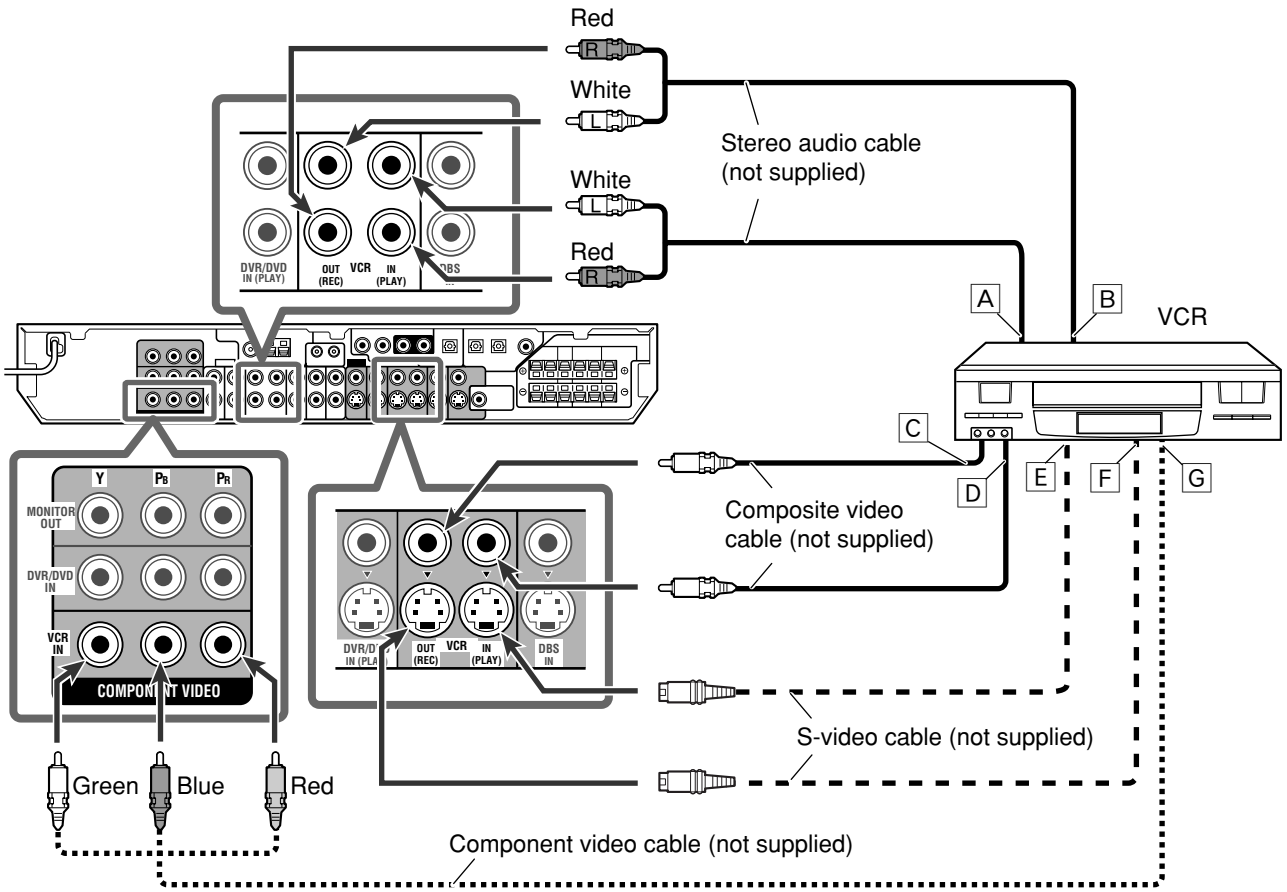
NOTES

- When using the headphones, you can listen to the front channel sounds (left and right) only. 3D HEADPHONE mode (see pages 28 and 29) is not available.
- When TV Direct is activated while "DVD MULTI" is selected as the source, the source changes to the last selected source—"DVR/DVD," "VCR," and "DBS" (see page 14).
- Surround/DSP modes (see pages 27 to 31) are not available for "DVD MULTI."

■ Connecting a VCR

Turn off all components before making connections.

- When you connect other components, refer also to their manuals.



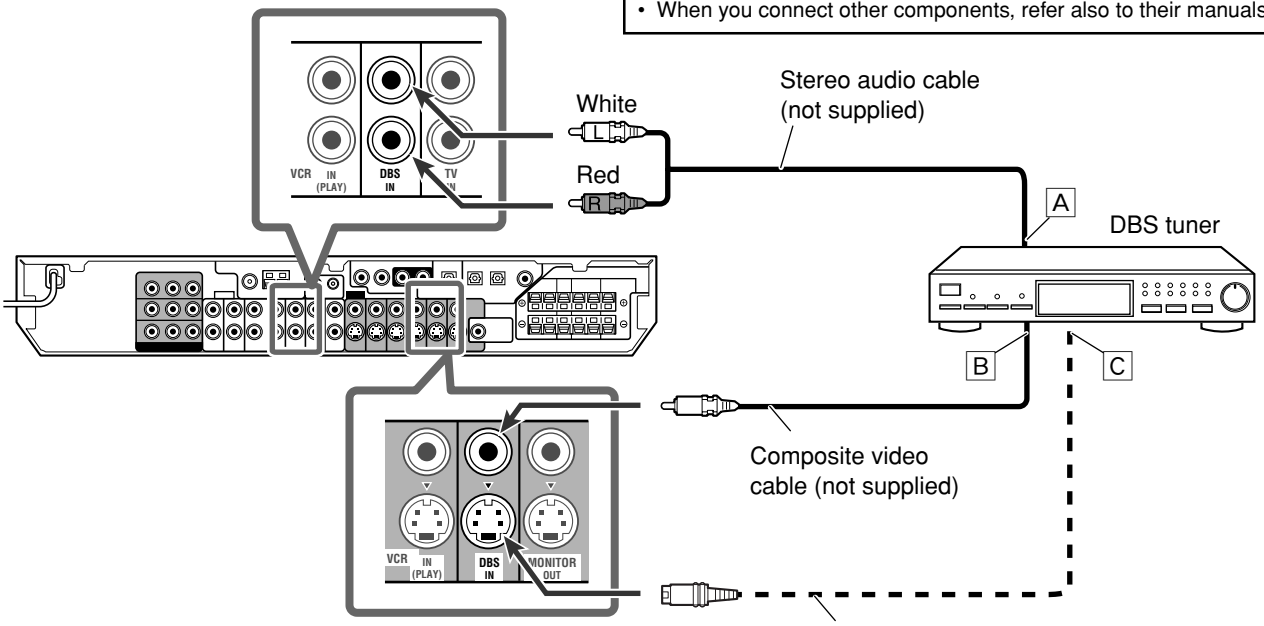
NOTE

When connecting a VCR to the component video input jacks, make the component video input setting (VCR VIDEO) correctly for AV COMPU LINK remote control system. See page 21 for details.

- A To left/right audio channel output
- B To left/right audio channel input
- C To composite video input
- D To composite video output
- E To S-video output
- F To S-video input
- G To component video output
  - Connect Y, P_B, and P_R correctly.

■ Connecting a DBS tuner

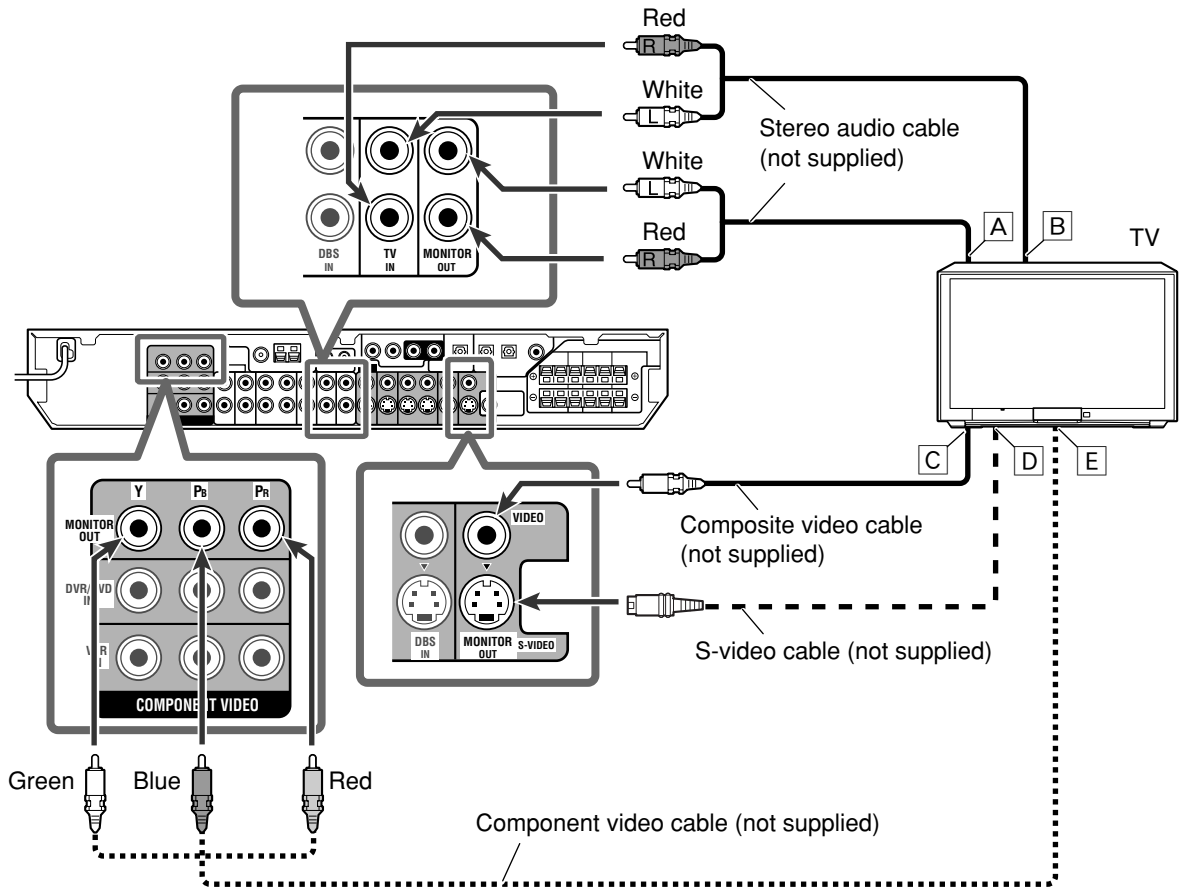
Turn off all components before making connections.
- When you connect other components, refer also to their manuals.



A To left/right audio channel output
B To composite video output
C To S-video output

■ Connecting a TV

Connect the TV to the appropriate MONITOR OUT jacks to view the playback pucture from any other connected video components.



IMPORTANT:

Audio signals come out through the MONITOR OUT (L/R) jacks ONLY when TV Direct is in use (see page 14).
Connect these jacks to the audio input jacks corresponding to the video connection; otherwise, no sound comes out of the TV speaker when TV Direct is in use.

A To left/right audio channel input
B To left/right audio channel output
C To composite video input
D To S-video input
E To component video input
- Connect Y, P_B, and P_R correctly.

Digital connection

This receiver is equipped with three DIGITAL IN terminals—one digital coaxial terminal and two digital optical terminals—and one DIGITAL OUT terminal.
To reproduce the digital sound, use the digital connection in addition to the analog connection methods described on pages 7 to 10.

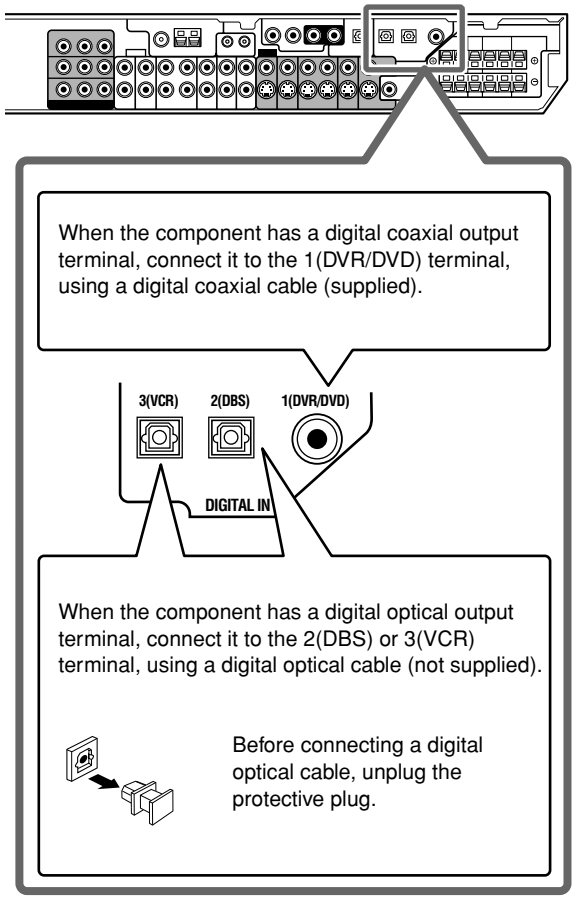
Digital coaxial cable (supplied: 1 cable)

Digital optical cable (not supplied)

Turn off all components before making connections.

- When you connect other components, refer also to their manuals.

■ Digital input terminals

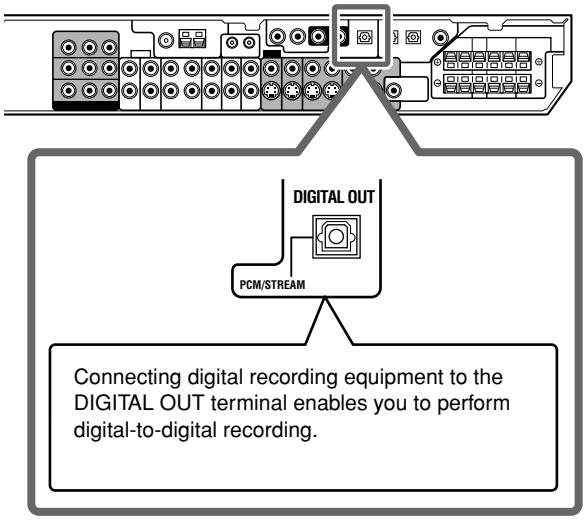

When the component has a digital coaxial output terminal, connect it to the 1(DVR/DVD) terminal, using a digital coaxial cable (supplied).
3(VCR)
2(DBS)
1(DVR/DVD)
DIGITAL IN
When the component has a digital optical output terminal, connect it to the 2(DBS) or 3(VCR) terminal, using a digital optical cable (not supplied).
Before connecting a digital optical cable, unplug the protective plug.

NOTES

- When shipped from the factory, the DIGITAL IN terminals have been set for use with the following components:
  – 1(DVR/DVD): For DVD recorder or DVD player
  – 2(DBS): For DBS tuner
  – 3(VCR): For VCR
  If you connect other components, change the digital input (DIGITAL IN) terminal setting correctly. See “Setting the digital input (DIGITAL IN) terminals—DIGITAL IN1/2/3” on page 21.
- Select the correct digital input mode. See “Selecting the analog or digital input mode” on page 12.
- When you want to operate the connected component (except DBS tuner) using the AV COMPU LINK remote control system (see pages 32 and 33), connect them also as described on pages 7 to 10.

■ Digital output terminal

You can connect any digital componens which have an optical digital input terminal.


DIGITAL OUT
PCM/STREAM
Connecting digital recording equipment to the DIGITAL OUT terminal enables you to perform digital-to-digital recording.

NOTE

The digital signal format transmitted through the DIGITAL OUT terminal is the same as that of the input signal. For example, when the DTS signals are input, the DTS signals are transmitted.

Connecting the power cord

When all the audio/video connections have been made, connect the AC power plug to the wall outlet. Make sure that the plugs are inserted firmly. The standby lamp lights in red.

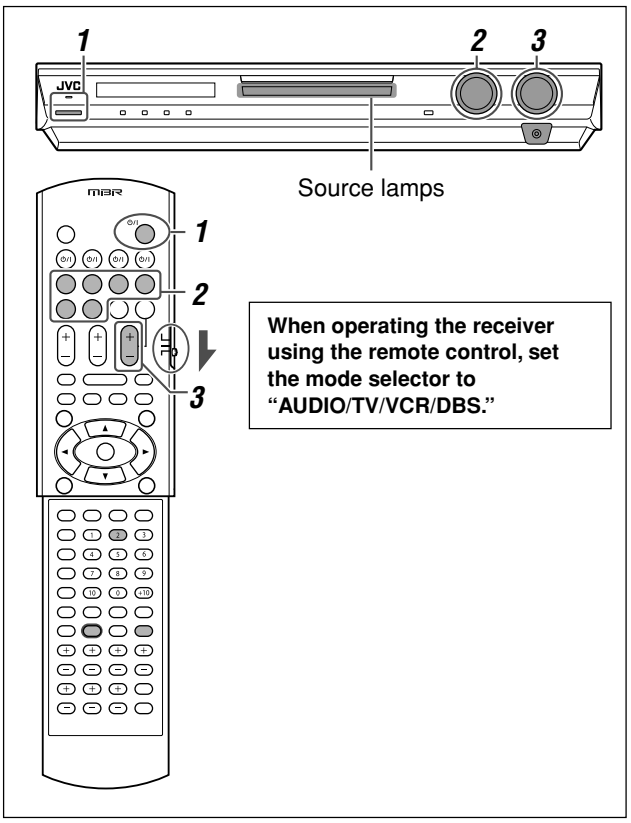
CAUTIONS:

- Do not touch the power cord with wet hands.
- Do not alter, twist or pull the power cord, or put anything heavy on it, which may cause fire, electric shock, or other accidents.
- If the cord is damaged, consult a dealer and have the power cord replaced with a new one.

NOTES

- Keep the power cord away from the connecting cables and the antenna. The power cord may cause noise or screen interference.
- The preset settings such as preset channels and sound adjustment may be erased in a few days in the following cases:
  – When you unplug the power cord.
  – When a power failure occurs.

Basic operations

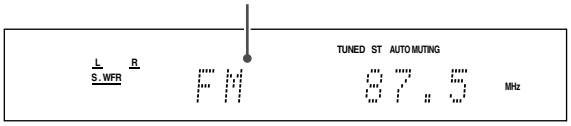


1 Turn on the power

Press ⏻/I STANDBY/ON (or ⏻/I AUDIO on the remote control).

The standby lamp goes off and the source lamp of the current source lights in red.

Current source name appears.



To turn off the power (into standby)

Press ⏻/I STANDBY/ON (or ⏻/I AUDIO on the remote control) again.
The standby lamp lights in red.

NOTE

A small amount of power is consumed in standby mode. To turn the power off completely, unplug the AC power cord.

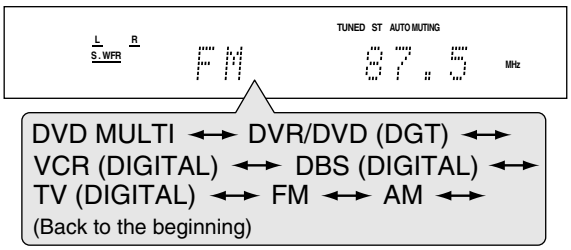
2 Select the source to play

On the front panel:

Turn SOURCE SELECTOR until the source name you want appears on the display.

The source lamp corresponding to the selected source lights in red.

- As you turn SOURCE SELECTOR, the source changes as follows:



DVD MULTI:	Select the DVD player using the analog discrete output mode (5.1-channel reproduction).
DVR/DVD (DGT)*:	Select the DVD recorder or DVD player.
VCR (DIGITAL)*:	Select the VCR.
DBS (DIGITAL)*:	Select the DBS tuner.
TV (DIGITAL)*:	Select the TV.
FM:	Select an FM broadcast.
AM:	Select an AM broadcast.

From the remote control:

Press one of the source selecting buttons.

- For the tuner, press FM/AM. Each time you press FM/AM, the band alternates between FM and AM.

* Selecting the analog or digital input mode

For a component you have connected using both the analog connection and the digital connection methods (see pages 7 to 11), you need to select the correct input mode.

- You can select the digital input only for sources which you have selected digital input terminals for. (See "Setting the digital input (DIGITAL IN) terminals—DIGITAL IN1/2/3" on page 21.)

From the remote control ONLY:

Press ANALOG/DIGITAL INPUT to select the analog or digital input mode.

- Each time you press the button, the input mode alternates between the analog input ("ANALOG") and the digital input ("DGTL AUTO"). This setting is memorized for each source.

DGTL AUTO:	Select for the digital input mode. The receiver automatically detects the incoming signal format, then the digital signal format indicator (LPCM, DOLBY D, DTS, or DTS 96/24) for the detected signal lights up.
ANALOG:	Select for the analog input mode.

Initial setting: ANALOG

NOTE

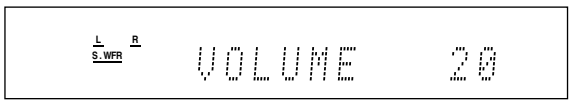
You cannot select the digital input mode when selecting "DVD MULTI," "FM," or "AM" as the source.

3 Adjust the volume

To increase the volume, turn MASTER VOLUME control clockwise (or press VOLUME + on the remote control).

To decrease the volume, turn MASTER VOLUME control counterclockwise (or press VOLUME – on the remote control).

- When you adjust the volume, the volume level indication appears on the display for a while.



CAUTION:

Always set the volume to the minimum before starting any sources. If the volume is set at its high level, the sudden blast of sound energy can permanently damage your hearing and/or ruin your speakers.

NOTE

The volume level can be adjusted within the range of "0" (minimum) to "50" (maximum).

Listening with headphones

You can enjoy not only stereo software but also multi-channel software through the headphones. (Sounds are down-mixed to the front channels while playing multi-channel software.)

Connect a pair of headphones to the PHONES jack on the front panel to activate the HEADPHONE mode.

The HP (headphone) indicator lights up on the display.

- You can also enjoy the Surround/DSP mode through the headphones—3D HEADPHONE mode. For details, see pages 28 and 29.
- Disconnecting a pair of headphones from the PHONES jack cancels the HEADPHONE (or 3D HEADPHONE) mode and activates the speakers.

CAUTION:

Be sure to turn down the volume:

- Before connecting or putting on headphones, as high volume can damage both the headphones and your hearing.
- Before removing headphones, as high volume may output from the speakers.

Selecting the digital decode mode

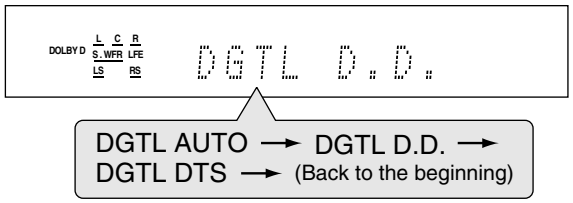
If the following symptoms occur while playing Dolby Digital or DTS software with "DGTL AUTO" selected (see page 12), follow the procedure below:

- Sound does not come out at the beginning of playback.
- Noise comes out while searching for or skipping chapters or tracks.

From the remote control ONLY:

Press SOUND, then press DECODE to select "DGTL D.D." or "DGTL DTS."

- Each time you press DECODE, the digital decode mode changes as follows:



- To play back software encoded with Dolby Digital, select "DGTL D.D."
- To play back software encoded with DTS, select "DGTL DTS."

NOTES

- When you turn off the power or select another source, "DGTL D.D." or "DGTL DTS" is canceled and the digital decode mode is automatically reset to "DGTL AUTO."
- After pressing SOUND, the numeric buttons work for sound adjustments. To use the numeric buttons to operate your target source, press the corresponding source selecting button before operation; otherwise, the remote control may not work as you intend.

The following digital signal format indicators on the display indicate what type of signal comes into the receiver.

LPCM: Lights up when Linear PCM signal comes in.

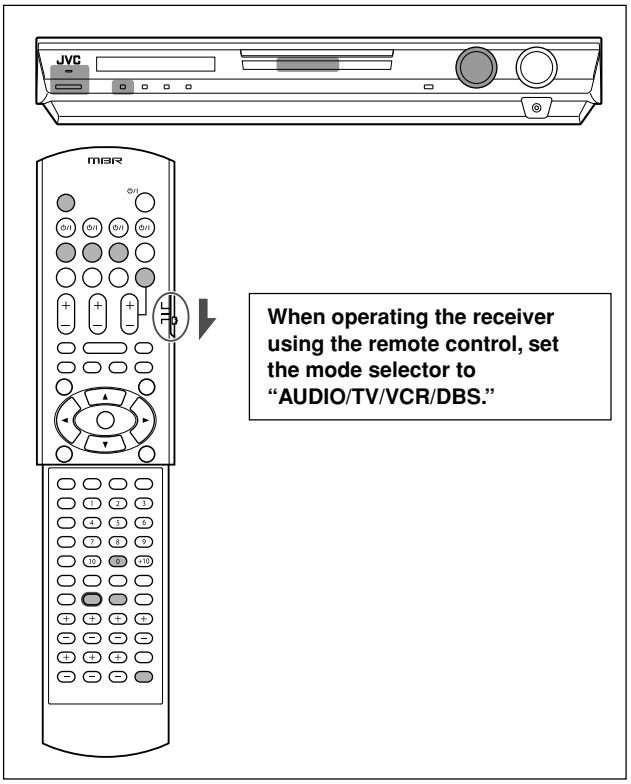
DOLBY D:
- Lights up when Dolby Digital signal comes in.
- Flashes when "DGTL D.D." is selected for any software other than Dolby Digital.

DTS:
- Lights up when conventional DTS signal comes in.
- Flashes when "DGTL DTS" is selected for any software other than DTS.

DTS 96/24: Lights up when DTS 96/24 signal comes in.

NOTE

When "DGTL AUTO" cannot recognize the incoming signal, no digital signal format indicator lights up on the display.



Adjusting the subwoofer audio position

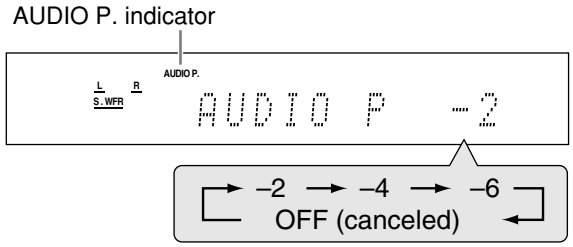
If the subwoofer sound is much reinforced for stereo sound compared to the sound reproduced with multi-channel, set the subwoofer audio position. The subwoofer output level is automatically decreased by the selected value when you are listening in stereo.
The AUDIO P. indicator lights up when this function is activated.

- Once you have made an adjustment, it is memorized for each source.

From the remote control ONLY:

Press SOUND, then press A.POSITION repeatedly.

- Each time you press A.POSITION, the subwoofer audio position level changes as follows:



The smaller the number becomes, the more the level decreases automatically when listening in stereo.

- If no adjustment is required, select "OFF" (initial setting).

NOTES

- The minimum subwoofer output level is –10 dB.
  Ex.: When setting the subwoofer output level to "–8 (dB)" and the subwoofer audio position to "–4 (dB)," the subwoofer output level when listening in stereo will be –10 dB.
  To adjust the subwoofer output level, see page 23.
- This function is not available when the Surround/DSP mode is activated or "DVD MULTI" is selected.
- After pressing SOUND, the numeric buttons work for sound adjustments. To use the numeric buttons to operate your target source, press the corresponding source selecting button before operation; otherwise, the remote control may not work as you intend.

Activating TV Direct

TV Direct enables you to use this receiver as an AV selector **while the receiver is turned off.**
When TV Direct is activated, the pictures and sounds go from the video components such as DVD player to the TV through this receiver. Thus, you can use the video components and the TV as if they were connected directly.

- This function takes effect for the following sources—DVR/DVD, VCR, and DBS.

To activate (or deactivate) TV Direct, follow the procedure below:

1 Press TV DIRECT.

All the indications disappear, then the source lamp of the current source lights in green.

2 Turn on the video component and TV.

3 Select the target video component.

On the front panel:

Turn SOURCE SELECTOR until one of the source lamps—DVR/DVD, VCR, or DBS—lights in green.

From the remote control:

Press one of the source selecting buttons—DVR/DVD, VCR, or DBS.

The source lamp corresponding to the selected source lights in green.

To cancel TV Direct and turn off the receiver, press ⏻/I STANDBY/ON on the front panel (or ⏻/I AUDIO on the remote control).
The receiver is turned off and the standby lamp lights up.

To cancel TV Direct and turn on the receiver, press TV DIRECT again.
The receiver is turned on and the source lamp currently selected lights in red.

NOTES

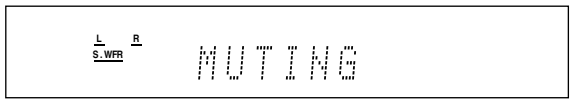
- When TV Direct is activated, you cannot enjoy any of the sound effects the receiver produces, and cannot use the speakers connected to the receiver.
- When TV Direct is activated while "DVD MULTI," "FM," or "AM" is selected as the source, the source changes to the last selected source—"DVR/DVD," "VCR," or "DBS."

Turning off the sounds temporarily

From the remote control ONLY:

Press MUTING to turn off the sound through all connected speakers and headphones.

"MUTING" appears on the display and the volume turns off.



To restore the sound, press MUTING again.

- Pressing VOLUME +/– (or turning MASTER VOLUME control on the front panel) also restores the sound.

Changing the display brightness

You can dim the display—Dimmer.

From the remote control ONLY:

Press DIMMER repeatedly.

- Each time you press the button, the display brightness changes as follows:

DIMMER 1:	Dims the display slightly. Dims the blue illumination slightly.
DIMMER 2:	Dims the display more than DIMMER 1. Dims the blue illumination slightly (same as DIMMER 1).
DIMMER 3:	Turns off the display and blue illumination. (Temporarily canceled when you operate the receiver.*)
DIMMER OFF:	Cancels the Dimmer (normal display).

* Except when activating or deactivating TV Direct.

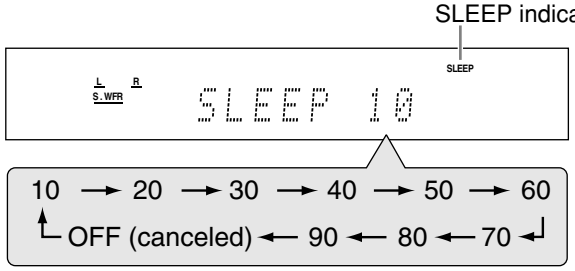
Turning off the power with the Sleep Timer

You can fall asleep while listening to music—Sleep Timer.

From the remote control ONLY:

Press SLEEP repeatedly.

- Each time you press the button, the shut-off time changes in 10 minute intervals. The SLEEP indicator lights up on the display.



When the shut-off time comes:
The receiver turns off automatically.

To check or change the remaining time until the shut-off time:
Press SLEEP once.
The remaining time (in minutes) until the shut-off time appears.

- To change the shut-off time, press SLEEP repeatedly.

To cancel the Sleep Timer:
Press SLEEP repeatedly so that "SLEEP OFF" appears on the display. (The SLEEP indicator goes off.)

- The Sleep Timer is also canceled when:
  – You turn off the receiver, or
  – You activate TV Direct.

Basic adjustment of auto memory

This receiver memorizes sound settings for each source:

- when you turn off the power, and
- when you change the source.

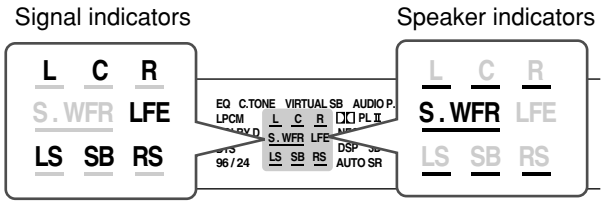
When you change the source, the memorized settings for the newly selected source are automatically recalled.
The following can be stored for each source:

- Analog/digital input mode (see page 12)
- Subwoofer audio position (see page 14)
- Speaker output level (see page 23)
- Subwoofer phase (see page 24)
- Digital equalization pattern (see page 24)
- Bass boost (see page 24)
- Input attenuator mode (see page 24)
- Surround/DSP mode selection (see pages 30 and 31)

NOTE

If the source is FM or AM, you can assign a different setting for each band.

Signal and speaker indicators on the display



The signal indicators light up as follows:

L:
- **When digital input is selected:** Lights up when the left channel signal comes in.
- **When analog input is selected:** Always lights up.

R:
- **When digital input is selected:** Lights up when the right channel signal comes in.
- **When analog input is selected:** Always lights up.

C: Lights up when the center channel signal comes in.
LS*: Lights up when the left surround channel signal comes in.
RS*: Lights up when the right surround channel signal comes in.
SB: Lights up when the surround back channel signal comes in.
LFE: Lights up when the LFE channel signal comes in.

* When monaural surround signal comes in, only "S" lights up.

NOTE

When "DVD MULTI" is selected as the source, all the signal indicators except "SB" light up.

The speaker indicators light up as follows:

- The subwoofer indicator (S.WFR) lights up when "SUBWOOFER" is set to "SUBWFR :YES." For details, see page 18.
- The other speaker indicators light up only when the corresponding speaker is set to "SML (small)" or "LRG (large)," and also when required for the current playback.

Basic settings

To obtain the best possible sound effect from Surround/DSP modes (see pages 27 to 31), you need to set up the speaker and subwoofer information after all the connections are completed. From pages 16 to 21, how to set speakers and other basic items of the receiver are explained.

Setting the speaker information automatically—Smart Surround Setup

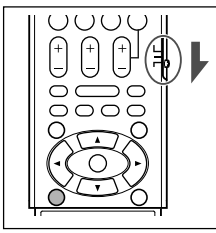
The distance from your listening point to the speakers is one of the important elements to obtain the best possible sound effect for the Surround/DSP modes.
By using Smart Surround Setup, the following are automatically calculated by one simple action—clapping hands.

- Speaker distance (compared to that of the closest speaker)
- Speaker output level (except the subwoofer)

NOTES

- To set the speaker information effectively using Smart Surround Setup, unplug the power cords of all the components connected to this receiver and the subwoofer which may cause noise.
- Before starting Smart Surround Setup, set the speaker information correctly (SML, LRG, or NO) according to your speakers except the subwoofer (see page 18).
- When the setting is made by Smart Surround Setup, the speaker distance and output level you have set before will be inactive.
- If you have turned off the display, cancel the Dimmer (see page 15); otherwise, you cannot see the information on the display during Smart Surround Setup.
- Smart Surround Setup will not be done correctly if you or other object blocks the sound.
- When you change your speakers, do the following procedure again.

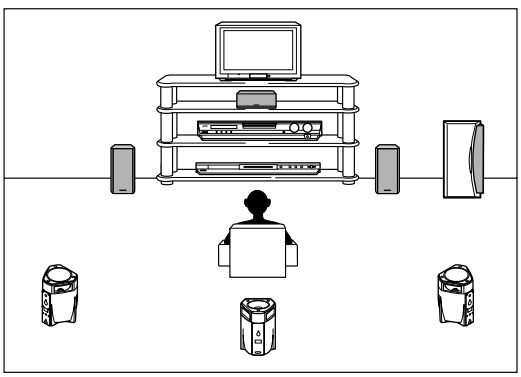
From the remote control ONLY:



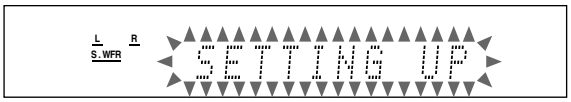
When operating the receiver using the remote control, set the mode selector to "AUDIO/TV/VCR/DBS."

1 Take your position where you listen to the sound.

- Make sure speaker cables are connected firmly.

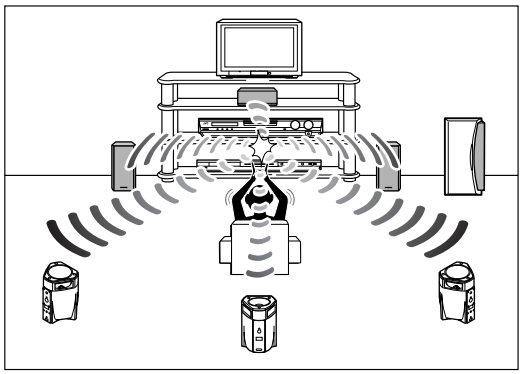


2 Press and hold SMART SURROUND SETUP until "SETTING UP" flashes on the display.



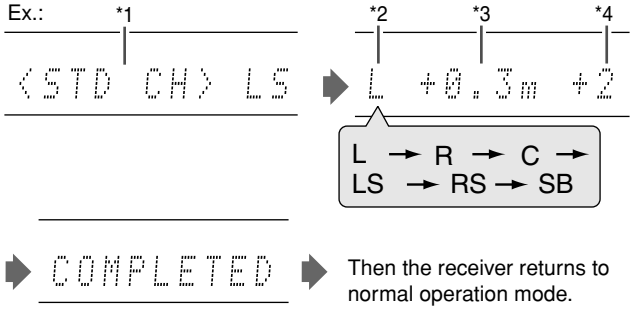
3 Confirm that "SETTING UP" stops flashing, then clap your hands over your head once while "SETTING UP" still remains on the display.

The receiver starts detecting the level of the sound coming through each speakers (except the subwoofer).



When your clapping sound is detected successfully,

"SUCCESSFUL" appears on the display, then the values set are shown as follows:



Then the receiver returns to normal operation mode.

*1	Standard channel (the closest speaker). This speaker position now works as the reference position ("0m/ft") and other speakers' distance is shown by the difference with this reference speaker position.
*2	**L:** Left front speaker **R:** Right front speaker **C:** Center speaker **LS:** Left surround speaker **RS:** Right surround speaker **SB:** Surround back speaker
*3	Difference of each speaker position in distance (in meters or feet).
*4	Each speaker's output level (–6 to +6).

When your clapping sound is not detected correctly,

"SETTING UP" appears again after one of the following messages. In this case, repeat step ***3***.

SILENT:
- The receiver detects sound from only the left and right front speakers.
- The receiver detects no sound from the front speakers and detects sound from at least one of the other speakers.

SILENT-ALL: The receiver cannot detect any sound from any speakers for about 15 seconds.

FAILED: The receiver cannot detect sound from the left or right front speaker.

In the following cases, set the speakers manually.

- **When the receiver detects the sound but as "SILENT" twice in succession.**

  The setting is made. (The distance of the speakers from which sound has not been detected is set to "+9.0m (+30ft).")
  The receiver exits from Smart Surround Setup.
- **When the receiver fails to detect the sound three times.**

  "MANUAL" appears on the display. The receiver exits from Smart Surround Setup.

To cancel Smart Surround Setup, press SMART SURROUND SETUP while "SETTING UP" flashes on the display.

- No other operations can be accepted after "SETTING UP" stops flashing. Complete the Smart Surround Setup.

To check the setting made by Smart Surround Setup, press SMART SURROUND SETUP while the receiver is in normal operation mode.
The setting values appear one after another (see page 16).

- If you have changed speaker distance and/or output level manually after using Smart Surround Setup, "MANUAL" appears.
- If you have not used Smart Surround Setup, "NO S.S.S." appears.

NOTES

- The speaker distance and output level manually set will be applied instead of those set by using Smart Surround Setup in the following cases:
  – When you change one of the speaker distance (see page 19).
  – When you change one of the speaker output level (see page 23).
  – When you change one of the speaker size either from "NO" to "SML" or "LRG," or from "SML" or "LRG" to "NO" (see page 18).
- When you want to adjust the speaker distance and output level manually, see pages 19 and 23.
- Do not clap your hands so hard that it may hurt your hands.

Basic setting items

You can adjust the following items. See pages in parentheses for details.

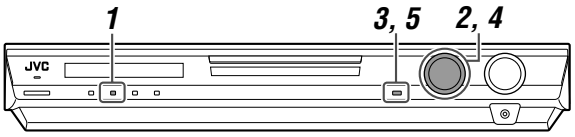
- You cannot select the items which is not available with the current setting.

Items	To do
SUBWOOFER	Register your subwoofer. (18)
FRONT SPK	Register your front speaker size. (18)
CENTER SPK	Register your center speaker size. (18)
SURRND SPK	Register your surround speaker size. (18)
S BACK SPK	Register your surround back speaker size. (18)
DIST UNIT	Select the measuring unit for the speaker distance. (19)
FRNT L DIST*	Register the distance from the left front speaker to your listening point. (19)
FRNT R DIST*	Register the distance from the right front speaker to your listening point. (19)
CENTER DIST*	Register the distance from the center speaker to your listening point. (19)
SURR L DIST*	Register the distance from the left surround speaker to your listening point. (19)
SURR R DIST*	Register the distance from the right surround speaker to your listening point. (19)
S BACK DIST*	Register the distance from the surround back speaker to your listening point. (19)
SUBWFR OUT	Select sounds emitted from the subwoofer. (19)
EX/ES	Select the EX/ES reproduction mode. (20)
DUAL MONO	Select the Dual Mono sound channel. (20)
CROSS OVER	Select the cutoff frequency to the subwoofer. (19)
LFE ATT	Attenuate the bass (LFE) sounds. (19)
MIDNIGHT M.	Reproduce a powerful sound at night. (20)
DIGITAL IN1	Select the component connected to the digital coaxial terminal—1(DVR/DVD). (21)
DIGITAL IN2	Select the component connected to the digital optical terminal—2(DBS). (21)
DIGITAL IN3	Select the component connected to the digital optical terminal—3(VCR). (21)
AUTO SURRND	Select Auto Surround mode. (21)
DVD VIDEO	Select the type of video terminal used for the DVD recorder or DVD player. (21)
VCR VIDEO	Select the type of video terminal used for the VCR. (21)

* If you have used Smart Surround Setup on page 16, these settings are not required.

CONTINUED ON THE NEXT PAGE

Operating procedure



On the front panel ONLY:

Before you start, remember...

There is a time limit in doing the following steps. If the setting is canceled before you finish, start from step ***1*** again.

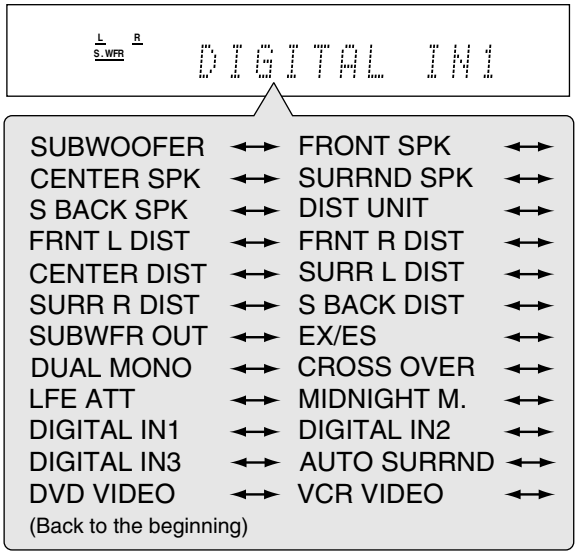
Ex.: When setting DIGITAL IN 1 terminal.

1 Press SETTING.

MULTI JOG now works for the setting operation.

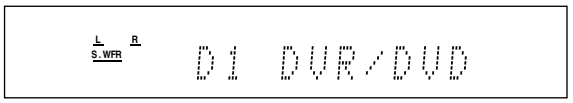
2 Turn MULTI JOG until the item you want to set appears on the display.

- As you turn MULTI JOG, the setting items change as follows:

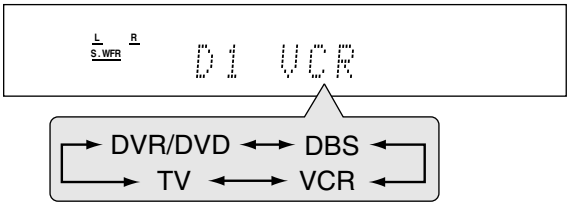

L
S.WFR
R
DIGITAL IN1
SUBWOOFER ↔ FRONT SPK ↔
CENTER SPK ↔ SURRND SPK ↔
S BACK SPK ↔ DIST UNIT ↔
FRNT L DIST ↔ FRNT R DIST ↔
CENTER DIST ↔ SURR L DIST ↔
SURR R DIST ↔ S BACK DIST ↔
SUBWFR OUT ↔ EX/ES ↔
DUAL MONO ↔ CROSS OVER ↔
LFE ATT ↔ MIDNIGHT M. ↔
DIGITAL IN1 ↔ DIGITAL IN2 ↔
DIGITAL IN3 ↔ AUTO SURRND ↔
DVD VIDEO ↔ VCR VIDEO ↔
(Back to the beginning)

3 Press SET.

The current setting of the selected item appears.



4 Turn MULTI JOG to select the appropriate setting.



Your setting is stored.

5 Press SET.

6 Repeat steps *2* to *5* to set other items if necessary.

Setting the speakers

Setting subwoofer information—SUBWOOFER

Each time the receiver turns on, the receiver detects the subwoofer connection and automatically changes the setting of the subwoofer.
When you want to change the setting manually, select either one below.

SUBWFR :YES	Select when you have connected a subwoofer. The subwoofer indicator (S.WFR) lights up on the display. You can adjust the subwoofer output level (see page 23).
SUBWFR : NO	Select when you have disconnected a subwoofer. Selecting this changes the front speaker size to "LRG" (see below).

NOTE

You need to change the setting each time you turn on the receiver if you want to change the subwoofer information set automatically.

Setting the speaker size—FRONT SPK (front speakers), CENTER SPK (center speaker), SURRND SPK (surround speakers), S BACK SPK (surround back speaker)

Register the sizes of all the connected speakers.

LRG (large)	Select when the cone speaker size is larger than 12 cm (4 3/4 inches).
SML (small)	Select when the cone speaker size is smaller than 12 cm (4 3/4 inches).
NO	Select when you have disconnected a speaker. (Not selectable for the front speakers.)

Initial setting: SML for all speakers*

* When "SUBWOOFER" is set to "SUBWFR : NO," the front speaker size is fixed to "LRG" (and you cannot select "SML").

NOTES

- If you have selected "SML (small)" for the front speaker size, you cannot select "LRG (large)" for other speakers.
- When "SURRND SPK" is set to "SML (small)," you cannot select "LRG (large)" for the surround back speaker.
- When "SURRND SPK" is set to "NO," the surround back speaker is fixed to "NO."
- If you change one of the speaker size either from "NO" to "SML" or "LRG," or from "SML" or "LRG" to "NO," the distance and output level manually set will be applied instead of those set by using Smart Surround Setup.

Setting the speaker distance

The distance from your listening point to the speakers is one of the important elements to obtain the best possible sound effect from the Surround/DSP modes.
By referring to the speaker distance, the receiver automatically sets the delay time of the sound through each speaker so that sounds through all the speakers can reach you at the same time.

■ **Measuring unit—DIST UNIT**

Select which measuring unit you use.

UNIT :meter	Select to set the distance in meters.
UNIT : feet	Select to set the distance in feet.

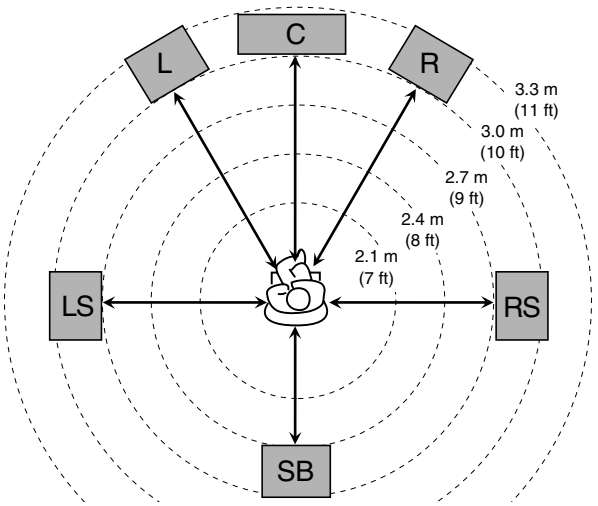
Initial setting: UNIT :meter

■ **Speaker distance—**
FRNT L DIST (for the left front speaker),
FRNT R DIST (for the right front speaker),
CENTER DIST (for the center speaker),
SURR L DIST (for the left surround speaker),
SURR R DIST (for the right surround speaker),
S BACK DIST (for the surround back speaker)

Adjustable range: 0.3 m to 9.0 m in 0.3 m intervals
(1 ft to 30 ft in 1 ft intervals)

Initial setting: 3.0 m (10 ft) for all speakers

- If you have used Smart Surround Setup on page 16, this setting is not required.



In this case, set the distance as follows:

Left front speaker (L):	“FL D : 3.0m (10ft)”
Right front speaker (R):	“FR D : 3.0m (10ft)”
Center speaker (C):	“C D : 3.0m (10ft)”
Left surround speaker (LS):	“LS D : 2.7m (9ft)”
Right surround speaker (RS):	“RS D : 2.7m (9ft)”
Surround back speaker (SB):	“SB D : 2.4m (8ft)”

NOTES

- You cannot set the speaker distance for the speakers you have set to “NO.”
- If you change one of these settings manually, the distance and output level manually set will be applied instead of those set by using Smart Surround Setup.

Setting bass sound

Setting subwoofer output—SUBWFR OUT

You can select the type of the signal which can be transmitted through the subwoofer. In other words, you can determine whether or not the bass elements of the front speaker channels are transmitted through the subwoofer regardless of the front speaker size setting (either “SML” or “LRG”).

SW: LFE	Select to emit only the LFE signals (while playing Dolby Digital and DTS software) or the bass elements of the “SML (small)” front speakers (while playing any source other than above).
SW:LFE+MAIN	Select to always emit the bass elements of the front speaker channels (MAIN). While playing Dolby Digital and DTS software, the bass elements and the LFE signals are both emitted.

Initial setting: SW: LFE

NOTE

When “SUBWOOFER” is set to “SUBWFR : NO” (see page 18), this function is not available.

Setting the crossover frequency—CROSS OVER

Small speakers cannot reproduce the bass sounds efficiently. If you use a small speaker in any position, this receiver automatically reallocates the bass sound elements assigned to the small speaker to the large speakers.
To use this function properly, set this crossover frequency level according to the size of the small speaker connected.

- If you have selected “LRG (large)” for all speakers (see page 18), this function will not take effect (“CROSS: OFF” appears).

CROSS: 80Hz	Select when the cone speaker unit built in the speaker is about 12 cm (4 3/4 inches).
CROSS:100Hz	Select when the cone speaker unit built in the speaker is about 10 cm (3 15/16 inches).
CROSS:120Hz	Select when the cone speaker unit built in the speaker is about 8 cm (3 3/16 inches).
CROSS:150Hz	Select when the cone speaker unit built in the speaker is about 6 cm (2 3/8 inches).
CROSS:200Hz	Select when the cone speaker unit built in the speaker is less than 5 cm (2 inches).

Initial setting: CROSS:150Hz

NOTE

Crossover frequency is not valid for the HEADPHONE and 3D HEADPHONE modes.

Setting the low frequency effect attenuator—LFE ATT

If the bass sound is distorted while playing back software encoded with **Dolby Digital** or **DTS**, set the LFE level to eliminate distortion.

- This function takes effect only when the LFE signals come in.

LFE : 0dB	Normally select this.
LFE :–10dB	Select when the bass sound is distorted.

Initial setting: LFE : 0dB

Activating the EX/ES setting—EX/ES

Depending on this setting, available Surround modes for digital multi-channel software vary—EX/ES (6.1-channel) reproduction or 5.1-channel reproduction. Select an appropriate setting for your enjoyment.

- For details about relation between EX/ES setting and available Surround mode, see page 30.
- To activate the Surround mode, see page 31.

EX/ES :AUTO	According to the incoming signal, an appropriate Surround mode is applied. • For Dolby Digital EX and DTS-ES software, EX/ES (6.1-channel) reproduction is applied*. • For other multi-channel (5.1-channel or less) encoded software, 5.1-channel reproduction is applied.
EX/ES : ON	Select to apply EX/ES (6.1-channel) reproduction to both 5.1-channel and 6.1-channel encoded software.
EX/ES : OFF	Select to cancel the EX/ES (6.1-channel) reproduction.

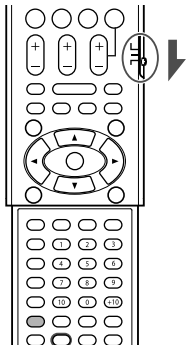
Initial setting: EX/ES :AUTO

* For some Dolby Digital EX software, Dolby Digital 5.1-channel reproduction ("DOLBY D") may be applied even though you have selected 6.1-channel reproduction to apply.

From the remote control:

Set the mode selector to "AUDIO/TV/VCR/DBS."

Press EX/ES repeatedly to select either one of the above.



NOTES

- When "SURRND SPK" is set to "NO" (see page 18), this function is not available.
- When "S BACK SPK" is set to "NO" (see page 18), the Virtual Surround Back (see page 30) is applied for EX/ES (6.1-channel) reproduction.

Selecting the main or sub channel —DUAL MONO

You can select the playback sound (channel) you want while playing digital software recorded (or broadcasted) in Dual Mono mode (see page 28), which includes two monaural channels separately.

D MONO:MAIN	Select to play back the main channel (Ch 1).* Signal indicator "L" lights up while playing back this channel.
D MONO: SUB	Select to play back the sub-channel (Ch 2).* Signal indicator "R" lights up while playing back this channel.
D MONO: ALL	Select to play back both the main and sub-channels (Ch 1/Ch 2).* Signal indicators "L" and "R" light up while playing back these channels.

Initial setting: D MONO:MAIN

* Dual Mono signals can be heard from the following speakers—L (left front speaker), R (right front speaker), and C (center speaker), with respect to the current Surround setting:

Dual Mono setting	Without Surround		With Surround Activated				
			Center speaker setting				
			SML/LRG			NO	
	L	R	L	C	R	L	R
MAIN	Ch 1	Ch 1	—	Ch 1	—	Ch 1	Ch1
SUB	Ch 2	Ch 2	—	Ch 2	—	Ch 2	Ch 2
ALL	Ch 1	Ch 2	—	Ch 1+Ch 2	—	Ch 1+Ch 2	Ch 1+Ch 2

NOTE

The Dual Mono format is not identical with bilingual broadcasting for TV programs. So this setting does not take effect while watching such bilingual programs.

Using the Midnight mode —MIDNIGHT M.

You can enjoy a powerful sound at night using the Midnight mode.

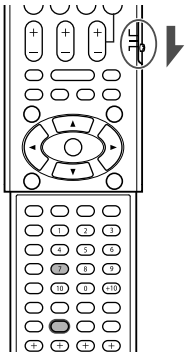
NIGHT :OFF	Select when you want to enjoy surround with its full dynamic range. (No effect applied.)
NIGHT : 1	Select when you want to reduce the dynamic range a little.
NIGHT : 2	Select when you want to apply the compression effect fully (useful at night).

Initial setting: NIGHT :OFF

From the remote control:

Set the mode selector to "AUDIO/TV/VCR/DBS."

Press SOUND, then press MIDNIGHT repeatedly to select either one of the above.



NOTE

After pressing SOUND, the numeric buttons work for sound adjustments. To use the numeric buttons to operate your target source, press the corresponding source selecting button before operation; otherwise, the remote control may not work as you intend.

Setting the digital input (DIGITAL IN) terminals—DIGITAL IN1/2/3

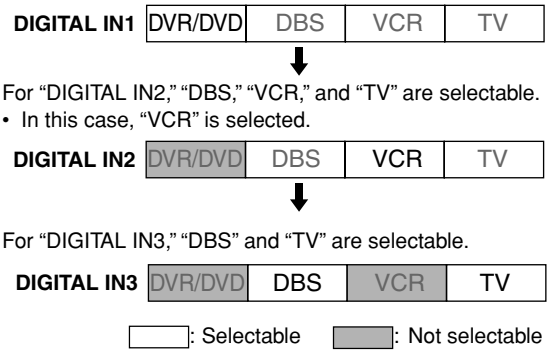
When you use the digital input terminals, register what components are connected to which terminals—DIGITAL IN1/2/3 (see page 11) so that the correct source name will appear when you select the digital source.
Select one of the following components for each terminal:

DVR/DVD	For the DVD player (or DVD recorder).
DBS	For the DBS tuner.
VCR	For the VCR.
TV	For the TV.

Initial setting: DVR/DVD (for "DIGITAL IN1")
DBS (for "DIGITAL IN2")
VCR (for "DIGITAL IN3")

NOTES

- You cannot assign the same component for different terminals. The priority order for assignment is as follows:
  "DIGITAL IN1" > "DIGITAL IN2" > "DIGITAL IN3."
  Ex.: When "DIGITAL IN1" is set to "DVR/DVD."



- Setting "DIGITAL IN1" affects "DIGITAL IN2" and "DIGITAL IN3" settings. When you have changed "DIGITAL IN1," confirm the components assigned to "DIGITAL IN2" and "DIGITAL IN3."

Setting Auto Surround—AUTO SURRND

You can enjoy the Surround mode simply by selecting the source (with digital input selected for that source).
- Auto Surround also works when the input mode changes from analog to digital.
- For details about the Surround/DSP modes, see pages 27 to 29.

Select "AUTO SR: ON" when activating Auto Surround.

AUTO SR: ON
The AUTO SR indicator lights up on the display.
- If a multi-channel signal comes in, an appropriate Surround mode will be turned on.
- If a Dolby Digital 2-channel or DTS 2-channel signal with surround signal comes in, "PLII MOVIE" or "NEO:6CINEMA" will be selected.
- If a Dolby Digital 2-channel or DTS 2-channel signal without surround signal comes in, "SURRND OFF (stereo)" will be selected.
- If a Linear PCM signal comes in, nothing will change.

AUTO SR:OFF
Select to deactivate Auto Surround.

Initial setting: AUTO SR:OFF

NOTES

- This function does not take effect in the following cases:
  – While playing an analog source,
  – While selecting any of DSP modes (see page 29), or one of the fixed digital decode mode—"DGTL D.D." or "DGTL DTS" (see page 13), and
  – While listening with the headphones.
- If you press SURROUND with Auto Surround activated, Auto Surround will be canceled temporarily for the currently selected source.
  Auto Surround setting will be restored in the following cases:
  – When you turn the receiver off and on,
  – When you change the source,
  – When you change the analog/digital input, and
  – When you select "AUTO SR: ON" again.

Selecting the component video input mode—DVD VIDEO/VCR VIDEO

When you use the component video inputs for connecting the DVD recorder (or DVD player) or VCR, register the type of video input jacks.
If you have not selected appropriate video input jacks, the AV COMPU LINK remote control system cannot operate properly (see page 32).

For the DVD recorder or DVD player (DVD VIDEO):

DVD : S/C	Select when connecting the DVD recorder (or DVD player) to the composite video or S-video input jacks.
DVD :COMPNT	Select when connecting the DVD recorder (or DVD player) to the component video input jacks.

Initial setting: DVD : S/C

For the VCR (VCR VIDEO):

VCR : S/C	Select when connecting the VCR to the composite video or S-video input jacks.
VCR :COMPNT	Select when connecting the VCR to the component video input jacks.

Initial setting: VCR : S/C

Sound adjustments

You can make sound adjustment to your preference after completing basic setting.

Basic adjustment items

You can adjust the following items. See pages in parentheses for details.

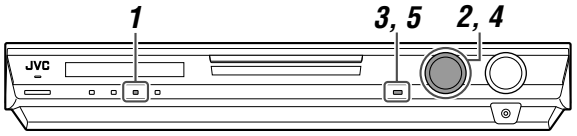
- You cannot select the items which is not available with the current setting.

Items	To do
SUBWFR LVL	Adjust the subwoofer output level. (23)
FRONT L LVL*	Adjust the left front speaker output level. (23)
FRONT R LVL*	Adjust the right front speaker output level. (23)
CENTER LVL*	Adjust the center speaker output level. (23)
SURR L LVL*	Adjust the left surround speaker output level. (23)
SURR R LVL*	Adjust the right surround speaker output level. (23)
S BACK LVL*	Adjust the surround back speaker output level. (23)
EFFECT	Adjust the effect level. (23)
PANORAMA	Add “wraparound” sound effect with side-wall image. (23)
BASS BOOST	Boost the bass level. (24)
INPUT ATT	Attenuate the input level of analog source. (24)
CENTER TONE	Make the center tone soft or sharp. (23)
D EQ 63Hz **D EQ 250Hz** **D EQ 1kHz** **D EQ 4kHz** **D EQ 16kHz**	Adjust the equalization pattern of each band. (24)
CENTER GAIN	Adjust the sound localization of the center channel. (24)
SBWFR PHASE	Select the subwoofer sound phase. (24)

* If you have used Smart Surround Setup on page 16, these settings are not required.

You can also use the remote control for sound adjustment except for the following items:
“PANORAMA,” “INPUT ATT,” “CENTER GAIN,” and “SBWFR PHASE.”

Operating procedure



On the front panel:

Before you start, remember...

There is a time limit in doing the following steps. If the setting is canceled before you finish, start from step ***1*** again.

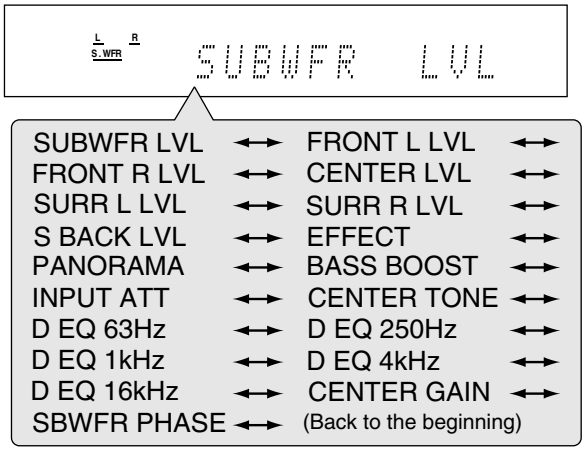
Ex.: When adjusting subwoofer output level.

1 Press ADJUST.

MULTI JOG now works for the sound adjustment.

2 Turn MULTI JOG until the item you want to adjust appears on the display.

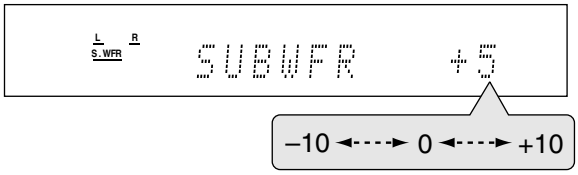
- As you turn MULTI JOG, the adjustment items change as follows:


L
S.WFR
R
SUBWFR LVL
SUBWFR LVL ↔ FRONT L LVL ↔
FRONT R LVL ↔ CENTER LVL ↔
SURR L LVL ↔ SURR R LVL ↔
S BACK LVL ↔ EFFECT ↔
PANORAMA ↔ BASS BOOST ↔
INPUT ATT ↔ CENTER TONE ↔
D EQ 63Hz ↔ D EQ 250Hz ↔
D EQ 1kHz ↔ D EQ 4kHz ↔
D EQ 16kHz ↔ CENTER GAIN ↔
SBWFR PHASE ↔ (Back to the beginning)

3 Press SET.

The current setting for the selected item appears.

4 Turn MULTI JOG to adjust the selected item.



Your adjustment is stored.

5 Press SET.

6 Repeat steps *2* to *5* to adjust other items if necessary.

Adjusting speaker output level

- **SUBWFR LVL (subwoofer output level),**
- **FRONT L LVL (left front speaker output level),**
- **FRONT R LVL (right front speaker output level),**
- **CENTER LVL (center speaker output level),**
- **SURR L LVL (left surround speaker output level),**
- **SURR R LVL (right surround speaker output level),**
- **S BACK LVL (surround back speaker output level)**

You can adjust the speaker output levels.
Adjust all the speakers' output levels so that you can listen to the sounds from all the speakers at the same level.
- Once you have made an adjustment, it is memorized for each source.

Adjustable range: –10 (dB) to +10 (dB) (in 1 step intervals)

Initial setting: 0 (dB) for all speakers

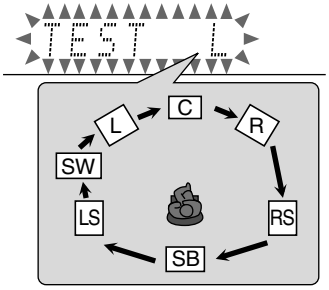
NOTES
- If you have selected "NO" for a speaker (see page 18), the output level for the corresponding speaker is not adjustable.
- While using the headphones, you can adjust only the left and right front speakers' output level.
- If you change one of these settings (except the subwoofer output level) manually, the distance and output level set manually will be applied instead of those set by using Smart Surround Setup.

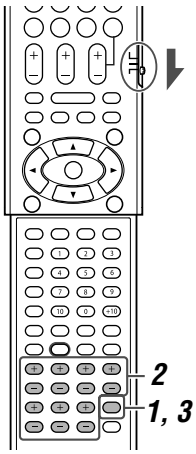
From the remote control:

Set the mode selector to "AUDIO/TV/VCR/DBS."

1 **Press TEST TONE to check the speakers' output balance.**

"TEST L" starts flashing on the display, and a test tone comes out of the speakers in the following order:





2 **Adjust the speaker output levels.**
- If no adjustment is made for about one minute, the test tone will stop.

To adjust the left front speaker level (L), press FRONT L +/–.

To adjust the right front speaker level (R), press FRONT R +/–.

To adjust the center speaker level (C), press CENTER +/–.

To adjust the left surround speaker level (LS), press SURR L +/–.

To adjust the right surround speaker level (RS), press SURR R +/–.

To adjust the surround back speaker level (SB), press S.BACK +/–.

To adjust the subwoofer level (SW), press SUBWFR +/–.

3 **Press TEST TONE again to stop the test tone.**

NOTES
- You can adjust the speaker output levels without the test tone.
- No test tone comes out of the speakers for which the speaker setting is set to "NO" (see page 18).
- No test tone is available when the headphone is in use or "DVD MULTI" is selected.

Adjusting the sound parameters for the Surround/DSP modes

You can adjust the Surround/DSP sound parameters to your preference.
- For details about the Surround/DSP modes, see pages 27 to 31.

Adjusting the effect level for DSP modes—EFFECT

This setting is available only when one of the DSP modes (except ALL CH ST.) is in use. To activate DSP mode, see page 31.
- Once you have made an adjustment, it is memorized for each DSP mode.

Adjustable range: 1 to 5 (in 1 step intervals)

Initial setting: EFFECT 3

As the number increases, the effect becomes stronger.
Normally, select "3."

Adjusting the panorama control for Pro Logic II Music—PANORAMA

This setting is available only when Pro Logic II Music is in use. To activate Pro Logic II Music, see page 31.
- Once you have made an adjustment, it is memorized until you change the setting.
- You cannot use the remote control for this setting.

PANORAMA ON	Select to add "wraparound" sound effect with side-wall image.
PANORAMAOFF	Select to listen to originally recorded sound.

Initial setting: PANORAMAOFF

Adjusting the center tone—CENTER TONE

This setting is available when one of the Surround/DSP modes is in use.
- If you have set "CENTER SPK" to "NO" (see page 18), the center tone is not adjustable.
- This setting is common to all Surround modes, and is memorized separately for DSP modes.

Adjustable range: 1 to 5 (in 1 step intervals)

Initial setting: CNT TONE 3

As the number increases, the dialogue becomes stronger.
Normally, select "3."
- When the center tone is set to other than "CNT TONE 3," the C.TONE indicator lights up on the display.

From the remote control:

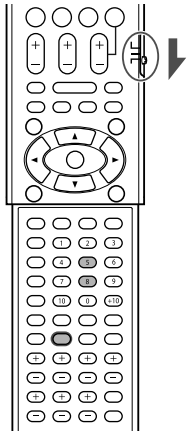
Set the mode selector to "AUDIO/TV/VCR/DBS."

To adjust the effect level:

Press SOUND, then press EFFECT repeatedly.

To adjust the center tone:

Press SOUND, then press C.TONE repeatedly.



NOTE

After pressing SOUND, the numeric buttons work for sound adjustments. To use the numeric buttons to operate your target source, press the corresponding source selecting button before operation; otherwise, the remote control may not work as you intend.

Adjusting the sound localization of the center channel—CENTER GAIN

This setting is available only when Neo:6 Music is in use.
- If you have set “CENTER SPK” to “NO” (see page 18), the center gain is not adjustable.
- Once you have made an adjustment, it is memorized until you change the setting.
- You cannot use the remote control for this setting.

Adjustable range: 0 to 0.5 (in 0.1 step intervals)

Initial setting: C GAIN 0.2

As the number increases, the center channel will be localized clearly.
Normally, select “0.2.”

Adjusting the bass sounds

Reinforcing the bass—BASS BOOST

You can boost the bass level—Bass Boost.
- Once you have made an adjustment, it is memorized for each source.

B.BOOST ON	Select to boost the bass level. The BASS indicator lights up on the display.
B.BOOST OFF	Select to deactivate the Bass Boost.

Initial setting: B.BOOST OFF

NOTE

This function affects only the sound coming out through the front speakers.

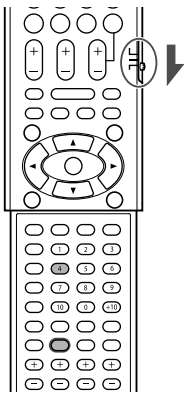
From the remote control:

Set the mode selector to “AUDIO/TV/VCR/DBS.”

Press SOUND, then press BASS BOOST repeatedly.
- Each time you press BASS BOOST, the Bass Boost turns on and off alternately.

NOTE

After pressing SOUND, the numeric buttons work for sound adjustments. To use the numeric buttons to operate your target source, press the corresponding source selecting button before operation; otherwise, the remote control may not work as you intend.



Attenuating the input signal—INPUT ATT

When the input level of **analog source** is too high, the sound will be distorted. If this happens, you need to attenuate the input signal level to prevent the sound distortion.
- Once you have made an adjustment, it is memorized for each source.
- You cannot use the remote control for this setting.

ATT ON	Select to attenuate the input signal level. The ATT indicator lights up on the display.
ATT NORMAL	Select to deactivate attenuation.

Initial setting: ATT NORMAL

Selecting the subwoofer sound phase—SBWFR PHASE

You can change the subwoofer sound phase to your preference.
- Once you have made an adjustment, it is memorized for each source.
- You cannot use the remote control for this setting.

PHASE NORM.	Normally select this.
PHASE REV.	Select this when you feel the bass sound is better with this mode rather than with “PHASE NORM.”

Initial setting: PHASE NORM.

NOTE

This function takes effect only when “SUBWOOFER” is set to “SUBWFR :YES” (see page 18).

Adjusting the equalization patterns—D EQ 63Hz/250Hz/1kHz/4kHz/16kHz

You can adjust equalization patterns in five frequency bands (center frequency: 63 Hz, 250 Hz, 1 kHz, 4 kHz, 16 kHz) for the front speakers.
- Once you have made an adjustment, it is memorized for each source.

Adjustable range: –8 (dB) to +8 (dB) (in 2 dB intervals)

Initial setting: 0 (dB) for all bands
- When adjustment is made, the EQ indicator lights up on the display.

If no adjustment is required, set all the frequency bands to “0 (dB).”
- The EQ indicator goes off from the display.

From the remote control:

Before you start, remember...

There is a time limit in doing the following steps. If the setting is canceled before you finish, start from step ***2*** again.

Set the mode selector to “AUDIO/TV/VCR/DBS.”

1 **Press SOUND.**

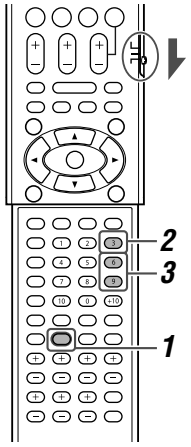
2 **Press EQ FREQ repeatedly to select the band you want to adjust.**

3 **Press EQ LEVEL +/– to adjust the equalization pattern of the selected band.**

4 **Repeat steps *2* and *3* to adjust other bands.**

NOTE

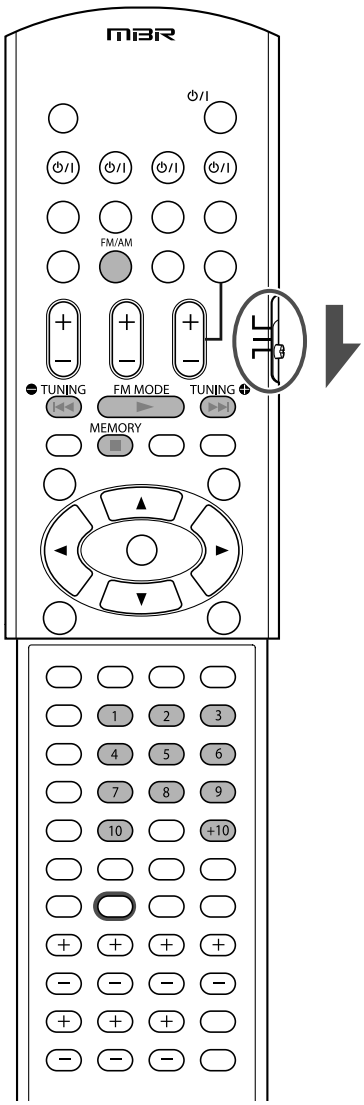
After pressing SOUND, the numeric buttons work for sound adjustments. To use the numeric buttons to operate your target source, press the corresponding source selecting button before operation; otherwise, the remote control may not work as you intend.



Tuner operations

Tuner operations are mainly done from the remote control.

When operating the receiver using the remote control, set the mode selector to "AUDIO/TV/VCR/DBS."



NOTE

When you have selected "FM" or "AM" by using SOURCE SELECTOR on the front panel, the remote control may not work for tuner operations. To use the remote control for tuner operations, select "FM" or "AM" by using the source selecting button on the remote control.

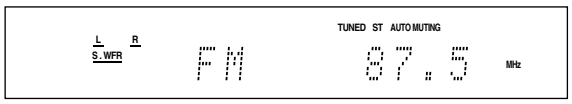
Tuning in to stations manually

From the remote control ONLY:

1 Press FM/AM to select the band.

The last received station of the selected band is tuned in.

- Each time you press the button, the band alternates between FM and AM.



2 Press repeatedly or hold TUNING ⊕ or ⊖ TUNING until the station you want is tuned in.

- Pressing (or holding) TUNING ⊕ increases the frequency.
- Pressing (or holding) ⊖ TUNING decreases the frequency.

NOTES

- When you hold and release TUNING ⊕ or ⊖ TUNING, the frequency keeps changing until a station is tuned in.
- When a station of sufficient signal strength is tuned in, the TUNED indicator lights up on the display.
- When an FM stereo program is received, the ST (stereo) indicator also lights up.

Using preset tuning

Once a station is assigned a channel number, the station can be quickly tuned simply by selecting the number. You can preset up to 30 FM and 15 AM stations.

To store the preset stations

Before you start, remember...

There is a time limit in doing the following steps. If the setting is canceled before you finish, start from step ***2*** again.

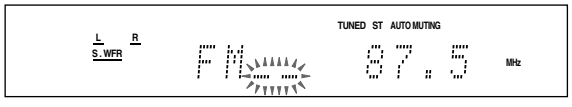
From the remote control ONLY:

1 Tune in to the station you want to preset (see "Tuning in to stations manually" above).

- If you want to store the FM reception mode for this station, select the FM reception mode you want. See "Selecting the FM reception mode" on page 26.

2 Press MEMORY.

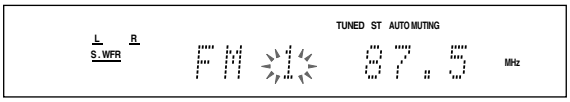
The channel number position starts flashing on the display for about 5 seconds.



CONTINUED ON THE NEXT PAGE

3 Press the numeric buttons (1 – 10, +10) to select a channel number while the channel number position is flashing.

- For channel number 5, press 5.
- For channel number 15, press +10, then 5.
- For channel number 30, press +10, +10, then 10.



4 Press MEMORY again while the selected channel number is flashing on the display.

The selected channel number stops flashing.
The station is assigned to the selected channel number.

5 Repeat steps *1* to *4* until you store all the stations you want.

To erase a stored preset station

Storing a new station on a used channel number erases the previously stored one.

To tune in a preset station

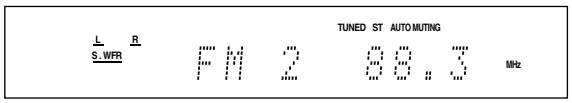
From the remote control:

1 Press FM/AM to select the band.

The last received station of the selected band is tuned in and the numeric buttons now work for tuner operations.

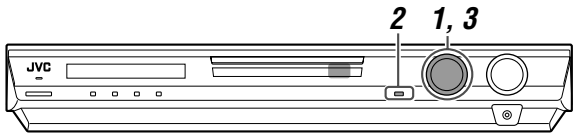
- Each time you press the button, the band alternates between FM and AM.

2 Press the numeric buttons (1 – 10, +10) to select a preset channel number.



- For channel number 5, press 5.
- For channel number 15, press +10, then 5.
- For channel number 30, press +10, +10, then 10.

On the front panel:



Before you start, remember...

There is a time limit in doing the following steps. If the setting is canceled before you finish, start from step *2* again.

1 Turn SOURCE SELECTOR to select "FM" or "AM."

The last received station of the selected band is tuned in.

2 Press TUNER PRESET.

"P" appears on the display and MULTI JOG now works for selecting preset channels.

3 Turn MULTI JOG to select a preset channel number while "P" appears on the display.

- To increase the preset channel numbers, turn MULTI JOG clockwise.
- To decreases the preset channel numbers, turn MULTI JOG counterclockwise.

Selecting the FM reception mode

When an FM stereo broadcast is hard to receive or noisy, you can change the FM reception mode while receiving an FM broadcast.

- You can store the FM reception mode for each preset station (see page 25).

From the remote control ONLY:

While listening to an FM station, press FM MODE.

- Each time you press the button, the FM reception mode alternates between "AUTO MUTING" and "MONO."

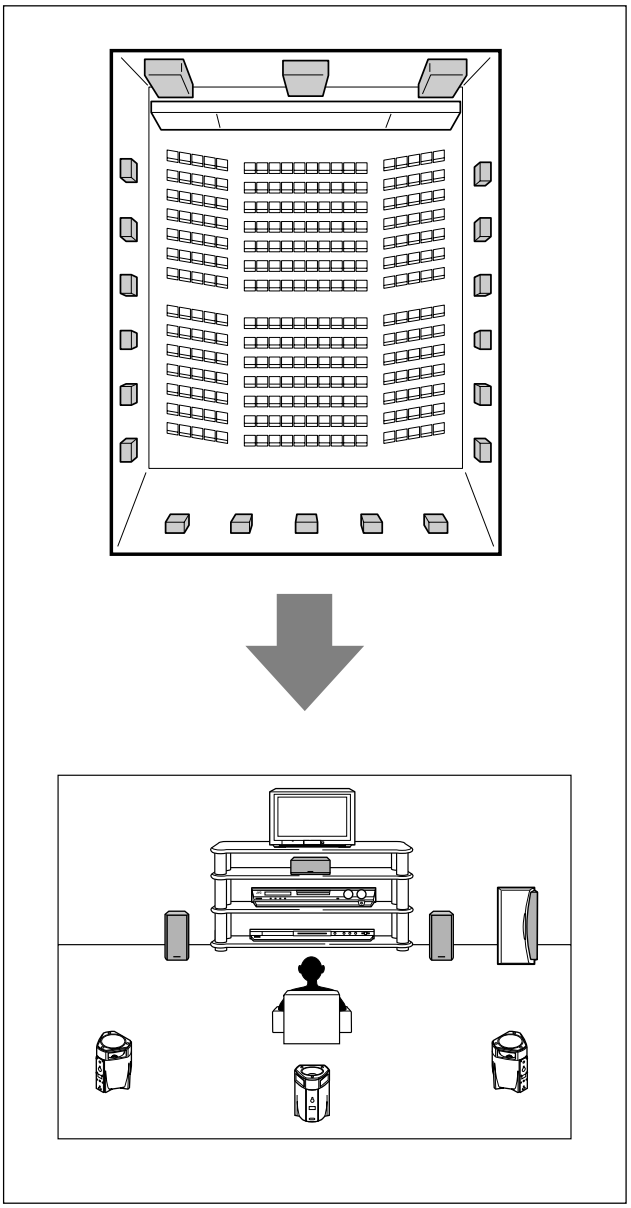
AUTO MUTING	Normally select this. When a program is broadcast in stereo, you will hear stereo sound; when in monaural, you will hear monaural sound. This mode is also useful to suppress static noise between stations. The AUTO MUTING indicator lights up on the display.
MONO	Select this to improve the reception (but stereo effect will be lost). In this mode, you will hear noise while tuning in to the stations. The AUTO MUTING indicator goes off from the display. (The ST indicator also goes off.)

Initial setting: AUTO MUTING

Creating realistic sound fields

Reproducing theater ambience

In a movie theater, many speakers are located on the walls to reproduce impressive multi-channel sound, reaching you from all directions.
With these many speakers, sound localization and sound movement can be expressed.
Surround/DSP modes built in this receiver can create almost the same Surround sound as you can feel in a real movie theater.



Introducing the Surround modes

■ Dolby Digital*

Dolby Digital is a digital signal compression method, developed by Dolby Laboratories, and enables multi-channel encoding and decoding.

- When Dolby Digital signal is detected through the digital input, the **DOLBY D** indicator lights up on the display.

Dolby Digital 5.1CH

Dolby Digital 5.1CH (DOLBY D) encoding method records and digitally compresses the left front channel, right front channel, center channel, left surround channel, right surround channel, and LFE channel signals (total 6 channels, but the LFE channel is counted as 0.1 channel. Therefore, called 5.1 channel).
Dolby Digital enables stereo surround sounds, and sets the cutoff frequency of the surround treble at 20 kHz, compared to 7 kHz for Dolby Pro Logic. As such, the sound movement and “being-there” feeling are enhanced much more than Dolby Pro Logic.

Dolby Digital EX

Dolby Digital EX (DOLBY D EX) is a digital surround encoding format that adds the third surround channels, called “surround back.”
Compared to the conventional Dolby Digital 5.1CH, these newly added surround back channels can reproduce more detailed movements behind you while viewing the video software. In addition, surround sound localization will become more stable.

■ Dolby Surround

Dolby Pro Logic II

Dolby Pro Logic II is a multi-channel playback format to convert 2-channel software into 5-channel (plus subwoofer). The matrix-based conversion method used for Dolby Pro Logic II makes no limitation for the cutoff frequency of the surround treble and enables stereo surround sound.

- This receiver provides two types of Dolby Pro Logic II modes—**Pro Logic II Movie** (PLII MOVIE) and **Pro Logic II Music** (PLII MUSIC).
  When Dolby Pro Logic II is activated, the DD PL II indicator lights up on the display.

PLII MOVIE	Suitable for playing any Dolby Surround encoded software. You can enjoy a sound field very close to the one created with discrete 5.1-channel sounds.
PLII MUSIC	Suitable for playing any 2-channel stereo software. You can enjoy wide and deep sounds.

- To enjoy software encoded with Dolby Digital, connect the source component using the digital terminal on the rear of this receiver. (See page 11.)

* Manufactured under license from Dolby Laboratories. “Dolby”, “Pro Logic”, and the double-D symbol are trademarks of Dolby Laboratories.

■ DTS**

DTS is another digital signal compression method, developed by Digital Theater Systems, Inc., and enables multi-channel encoding and decoding (1ch up to 6.1ch).

- When DTS signal is detected through the digital input, the **DTS** indicator lights up on the display.

DTS Digital Surround

DTS Digital Surround (DTS) is another discrete 5.1 channel digital audio format available on CD, LD, and DVD software. Compared to Dolby Digital, the DTS Digital Surround format has a lower audio compression rate which enables it to add breadth and depth to the sounds reproduced. As such, DTS Digital Surround features natural, solid, and clear sound.

DTS Extended Surround (DTS-ES)

DTS-ES is another multi-channel digital encoding format.
It greatly improves the 360-degree surround impression and space expression by adding the third surround channel—surround back channel.
DTS-ES includes two signal formats with different surround signal recording methods—**DTS-ES Discrete 6.1ch** (ES DISCRETE) and **DTS-ES Matrix 6.1ch** (ES MATRIX).
DTS-ES Discrete 6.1ch has been designed to encode (and decode) a 6.1-channel signal discretely to avoid interference with each channel.
DTS-ES Matrix 6.1ch has been designed to add an extra surround channel to DTS Digital Surround 5.1-channel. By using a matrix encoding/decoding method, an additional "surround back" channel signal is encoded (and decoded) in both the left and right surround channel signals.

DTS 96/24

In recent years, there has been increasing interest in higher sampling rates both for recording and for reproducing at home. Higher sampling rates allow wider frequency range and greater bit depths provide extended dynamic range.
DTS 96/24 is a multi-channel digital signal format (fs 96 kHz/24 bits) introduced by Digital Theater Systems, Inc. to deliver "better-than-CD sound quality" into the home.

- When DTS 96/24 signal is detected, the DTS and 96/24 indicators light up. You can enjoy its 5.1-channel sound with full-quality.

DTS Neo:6

DTS Neo:6 is another conversion method to create 6-channel (plus subwoofer) from analog/digital 2-channel software by using the high precision digital matrix decoder used for DTS-ES Matrix 6.1ch.

- This receiver provides the following DTS Neo:6 modes—**Neo:6 Cinema** (NEO:6CINEMA) and **Neo:6 Music** (NEO:6 MUSIC). When one of them is activated, the NEO:6 indicator lights up on the display.

NEO:6CINEMA	Suitable for playing movies. You can get the same atmosphere with 2-channel software as with 6.1-channel software. It is also effective for playing software encoded with conventional surround formats.
NEO:6 MUSIC	Suitable for playing music software. The front channel signals bypass the decoder (resulting in no loss of sound quality) and the surround signals transmitted through the other speakers expand the sound field naturally.

** "DTS", "DTS-ES", "Neo:6" and "DTS 96/24" are trademarks of Digital Theater Systems, Inc.

When using Surround mode, the sounds come out of the activated speakers which the Surround mode requires.

- **If either the surround speakers or center speaker is set to "NO" in the speaker setting (see page 18),** the corresponding channel signals are allocated to and emitted through the front speakers.
- **If both the surround speakers and center speaker are set to "NO" in the speaker setting (see page 18),** JVC's original 3D-PHONIC processing (which has been developed to create the surround effect through the front speakers only) is used. The 3D indicator lights up on the display.

3D HEADPHONE mode

If you connect a pair of headphones while one of the Surround modes is in use, the 3D HEADPHONE mode is activated without respect to the type of software played back. "3DHEADPHONE" appears on the display and the DSP, 3D, and HP indicators light up.

About other digital signals

Linear PCM

Uncompressed digital audio data used for DVDs, CDs, and Video CDs.
DVDs support 2 channels with sampling rates of 48/96 kHz, at quantization of 16/20/24 bits. On the other hand, CDs and Video CDs are limited to 2 channels with 44.1 kHz at 16 bits.

- When Linear PCM signal is detected, the LPCM indicator lights up.

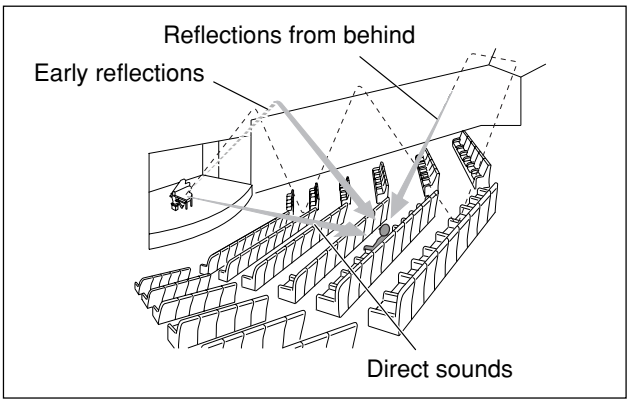
Dual Mono

Dual Mono can be easily understood when you think of the bilingual broadcast for TV programs (however, the Dual Mono format is not identical with those analog formats).
This format is now adopted in Dolby Digital, DTS, and so on. It allows two independent channels (called main channel and sub-channel) to be recorded separately.

- You can select either channel you want to listen to (see page 20).

Introducing the DSP modes

The sound heard in a concert hall, club, etc. consists of direct sound and indirect sound—early reflections and reflections from behind. Direct sounds reach the listener directly without any reflection. On the other hand, indirect sounds are delayed by the distances of the ceiling and walls. These direct sounds and indirect sounds are the most important elements of the acoustic surround effects.
The DSP modes can create these important elements, and give you a real "being there" feeling.



The DSP modes include the following modes:
- Digital Acoustic Processor (DAP) modes—HALL1, HALL2, LIVE CLUB, DANCE CLUB, PAVILION, THEATER1, THEATER2
- MONO FILM—Used for all types of 2-channel signals (including Dual Mono signal)
- All Channel Stereo mode (ALL CH ST.)

When one of the DSP modes is activated, the DSP indicator lights up on the display.

■ Digital Acoustic Processor (DAP) modes

You can use the following DAP modes in order to reproduce a more acoustic sound field in your listening room.

HALL1	Reproduces the spatial feeling of a large shoebox-shaped hall designed primarily for classical concerts. (Its seating capacity is about 2000.)
HALL2	Reproduces the spatial feeling of a large vineyard-shaped hall designed primarily for classical concerts. (Its seating capacity is about 2000.)
LIVE CLUB	Reproduces the spatial feeling of a live music club with a low ceiling.
DANCE CLUB	Reproduces the spatial feeling of a rocking dance club.
PAVILION	Reproduces the spatial feeling of an exhibition hall with a high ceiling.
THEATER1	Reproduces the spatial feeling of a large theater where the seating capacity is about 600.
THEATER2	Reproduces the spatial feeling of a small theater where the seating capacity is about 300.

NOTE

When "THEATER1" or "THEATER2" is activated while playing back 2-channel analog or digital source, the built-in Dolby Pro Logic II decoder is activated and the DOLBY PL II indicator lights up.

When using the DAP mode, the sounds come out of all the connected and activated speakers.

- **If the surround speakers are set to "NO" in the speaker setting (see page 18),** JVC's original 3D-PHONIC processing (which has been developed to create the surround effect through the front speakers only) is used.
  The 3D indicator lights up on the display.

■ MONO FILM

In order to reproduce a more acoustic sound field in your listening room while viewing monaural sound video software (analog and 2-channel digital signals including Dual Mono signal), you can use this mode.
The surround effect will be added, and the sound localization of actor's words will be improved.

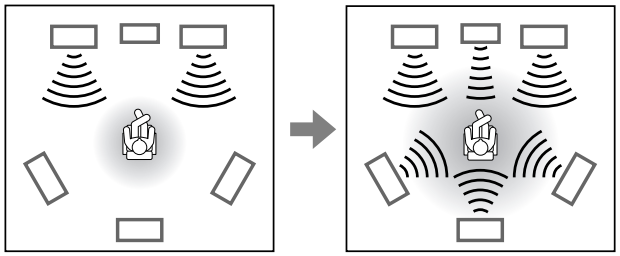
This mode cannot be used for multi-channel digital signals.

When "MONO FILM" is used, sounds come out of all the connected (and activated) speakers.

- **If the surround speakers are set to "NO" in the speaker setting (see page 18),** JVC's original 3D-PHONIC processing (which has been developed to create the surround effect through the front speakers only) is used.
  The 3D indicator lights up on the display.
- If incoming signals change from 2-channel digital signal to another digital signal type, "MONO FILM" is canceled and an appropriate Surround mode is activated.

■ All Channel Stereo mode (ALL CH ST.)

This mode can reproduce a larger stereo sound field using all the connected (and activated) speakers. **This mode cannot be used if the surround speakers are set to "NO" in the speaker setting (see page 18).**



Sound reproduced from normal stereo

Sound reproduced from All Channel Stereo mode

3D HEADPHONE mode

If you connect a pair of headphones while one of the DSP modes is in use, the 3D HEADPHONE mode is activated without respect to the type of software played back. "3DHEADPHONE" appears on the display and the DSP, 3D, and HP indicators light up.

Using the Surround/DSP modes

Available Surround/DSP modes vary depending on the speaker settings and the incoming signals. See the table below.

- The numbers inside the parentheses following the incoming signal type indicate the number of the front channels and that of the surround channels. For example, (3/2) indicates that the signals are encoded with three front signals (left/right/center) and two (stereo) surround signals.
- For EX/ES setting, see page 20.

Incoming signal	Surround back speaker setting (SML/LRG/NO)	EX/ES setting (AUTO/ON/OFF)	Surround mode	DSP modes
Dolby Digital EX	**SML/LRG**	**AUTO/ON**	DOLBY D EX	HALL1/2, LIVE CLUB, DANCE CLUB, PAVILION, THEATER1/2, ALL CH ST.
		OFF	DOLBY D	
	NO	**AUTO/ON**	DOLBY D (Virtual Surround Back)	
		OFF	DOLBY D	
Dolby Digital (3/2, 2/2)	**SML/LRG**	**ON**	DOLBY D EX	
		AUTO/OFF	DOLBY D	
	NO	**ON**	DOLBY D (Virtual Surround Back)	
		AUTO/OFF	DOLBY D	
Dolby Digital (3/1, 2/1, 3/0, 1/0)	**SML/LRG/NO**	**AUTO/ON/OFF**	DOLBY D	
DTS-ES Discrete 6.1 ch	**SML/LRG**	**AUTO/ON**	ES DISCRETE	
		OFF	DTS	
	NO	**AUTO/ON**	DTS (Virtual Surround Back)	
		OFF	DTS	
DTS-ES Matrix 6.1 ch DTS-ES 96/24 Matrix	**SML/LRG**	**AUTO/ON**	ES MATRIX	
		OFF	DTS	
	NO	**AUTO/ON**	DTS (Virtual Surround Back)	
		OFF	DTS	
DTS, DTS 96/24 (3/2, 2/2)	**SML/LRG**	**ON**	DTS NEO:6	
		AUTO/OFF	DTS	
	NO	**ON**	DTS (Virtual Surround Back)	
		AUTO/OFF	DTS	
DTS (3/1, 2/1, 3/0, 1/0)	**SML/LRG/NO**	**AUTO/ON/OFF**	DTS	

Incoming signals	Available Surround modes	Available DSP modes
Dolby Digital (Dual Mono)	DUAL MONO	HALL1/2, LIVE CLUB, DANCE CLUB, PAVILION, THEATER1/2, MONO FILM, ALL CH ST.
DTS (Dual Mono)		
Dolby Digital (2-channel)	PLII MOVIE, PLII MUSIC, NEO:6CINEMA, NEO:6 MUSIC	
DTS (2-channel)		
Linear PCM		
Analog		
DVD MULTI	None	None

NOTES

- For some Dolby Digital EX software, Dolby Digital 5.1-channel reproduction (“DOLBY D”) is applied.
- DTS 96/24 processing is not applied when the EX/ES setting is activated. If you want to apply the processing, set the EX/ES setting to “EX/ES : OFF” (see page 20).
- You cannot select “ALL CH ST.” when the surround speakers are set to “NO” in the speaker setting (see page 18).

Virtual Surround Back

If you have connected (and activated) the surround speakers, you can use Virtual Surround Back when playing back Dolby Digital EX or DTS-ES software without connecting the surround back speaker.
This function creates the great surround effect from the behind as if you have connected the surround back speaker. The VIRTUAL SB (Surround Back) indicator lights up on the display.

Activating the Surround/DSP modes

Available Surround/DSP modes vary depending on the speaker settings and the incoming signals. For details, see page 30.

Activating one of the Surround/DSP modes automatically recalls the memorized settings and adjustments.

- **To adjust the speaker output level,** see page 23.
- **To adjust the effect level for the DSP mode (except All Channel Stereo mode),** see page 23.
- **To add "wraparound" sound effect to "PLII MUSIC" (PANORAMA control),** see page 23.
- **To adjust the sound localization of the center channel for "NEO:6 MUSIC" (center gain),** see page 24.

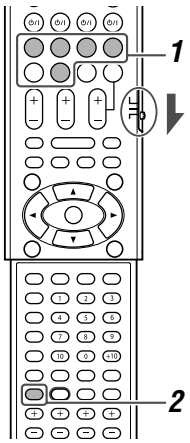
NOTES

- You cannot use any Surround/DSP modes when selecting "DVD MULTI" as the playback source.
- You cannot select All Channel Stereo mode if the surround speakers are set to "NO" in the speaker setting (see page 18).

If "AUTO SURRND (Auto Surround)" is set to "ON"

You can enjoy Surround mode simply by playing back multi-channel software (with digital input selected for that source). To activate Auto Surround, see page 21.

From the remote control:



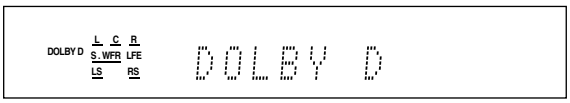
When operating the receiver using the remote control, set the mode selector to "AUDIO/TV/VCR/DBS."

1 Select and play any source other than "DVD MULTI."

- Make sure you have selected the input mode (analog or digital) correctly.

2 Press SURROUND repeatedly to select the Surround/DSP mode you want.

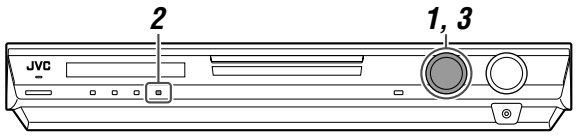
Ex.: When "DOLBY D" is selected for Dolby Digital multi-channel software:



To cancel Surround/DSP modes

Press SURROUND repeatedly so that "SURRND OFF" appears on the display.

On the front panel:



Before you start, remember...

There is a time limit in doing the following steps. If the setting is canceled before you finish, start from step ***2*** again.

1 Select and play any source other than "DVD MULTI."

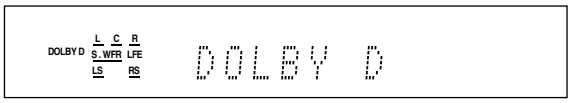
- Make sure you have selected the input mode (analog or digital) correctly.

2 Press SURROUND.

MULTI JOG now works for selecting Surround/DSP modes.

3 Turn MULTI JOG to select the Surround/DSP mode you want.

Ex.: When "DOLBY D" is selected for Dolby Digital multi-channel software:



To cancel Surround/DSP modes

Turn MULTI JOG so that "SURRND OFF" appears on the display.

AV COMPU LINK remote control system

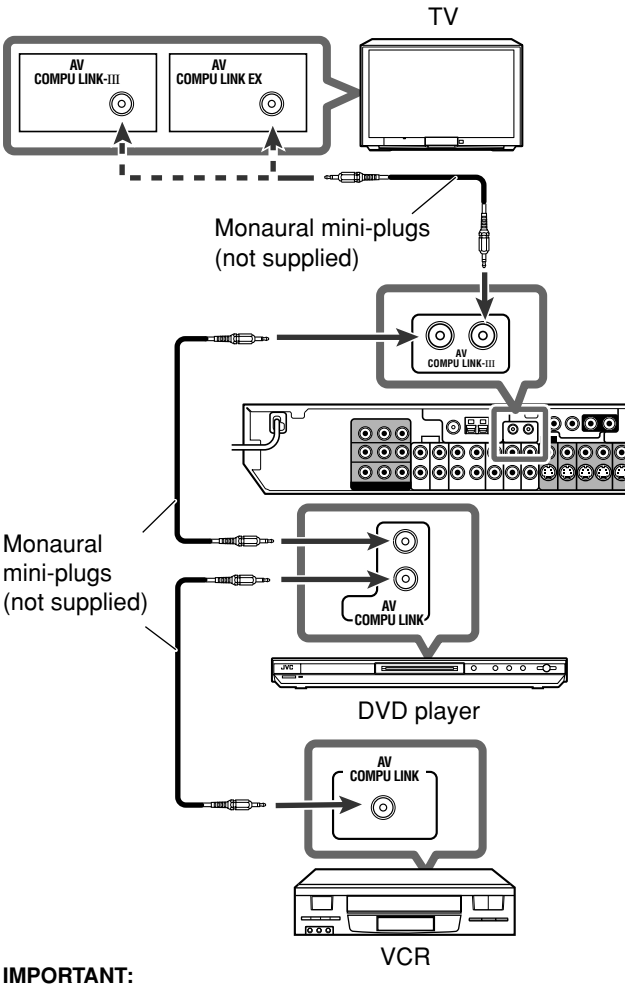
The AV COMPU LINK remote control system allows you to operate JVC's video components (TV, DVD player*, and VCR) through this receiver.

This receiver is equipped with the AV COMPU LINK-III, which has added a function to operate JVC's video components through the component video jacks. To use this remote control system, you need to connect the video components you want to operate, following the diagrams below and the procedures on page 33.

- Refer also to the manuals supplied with your video components.

* "DVD player" on pages 32 and 33 can be replaced with "DVD recorder."

Connections 1: AV COMPU LINK connection



IMPORTANT:

The AV COMPU LINK remote control system cannot control the DBS tuner connected to the DBS IN jacks.

NOTES

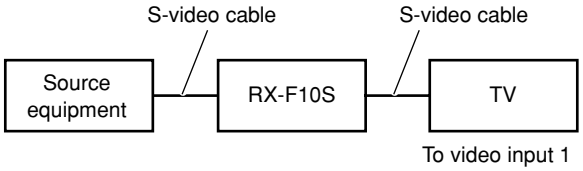
- When connecting the receiver and a TV with the AV COMPU LINK EX terminal by using a component video cable, you cannot use Automatic selection of TV's input mode (see page 33).
- When connecting only the VCR and DVD player to this receiver, connect it directly to the receiver using cable with the monaural mini-plugs.
- You can connect only the TV with AV COMPU LINK EX or AV COMPU LINK-III terminal to the AV COMPU LINK-III terminal.

Connections 2: Video cable connection

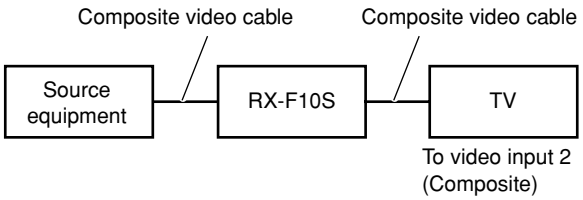
This receiver is equipped with three types of the video terminals—composite video, S-video, and component video, and the signals coming into this receiver through one type of video terminals can output only through the terminal of the same type. So you need to connect the video components to this receiver using one of the following three ways.

- When using the AV COMPU LINK remote control system, set the video input for the DVD player and the VCR correctly (see "Selecting the component video input mode—DVD VIDEO/VCR VIDEO" on page 21); otherwise, the correct input for this receiver will not be selected on the TV.

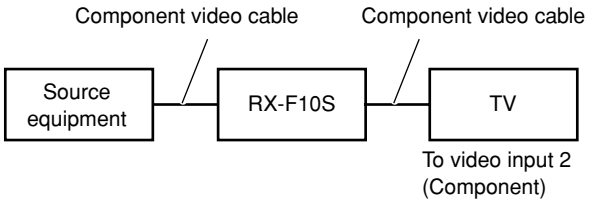
Case 1:
When connecting the source equipment to the receiver through the S-video terminals, connect this receiver to the TV's video input 1 terminal using S-video cables.



Case 2:
When connecting the source equipment to the receiver through the composite video jacks, connect this receiver to the TV's video input 2 terminal (composite video input) using composite video cables.



Case 3:
When connecting the source equipment to the receiver through the component video jacks, connect this receiver to the TV's video input 2 terminals (component video input) using component video cables.



Connecting procedure

1 If you have already plugged your VCR, DVD player, TV, and this receiver into the AC outlets, unplug their AC power cords first.

2 Connect your VCR, DVD player, TV, and this receiver as follows, using the cables with the monaural mini-plugs (not supplied).

- See “Connections 1” on the previous page.

3 Connect the audio input/output jacks on the VCR, DVD player, TV, and this receiver using the audio cables.

- See pages 7 to 10.

4 Connect the video input/output jacks on the VCR, DVD player, TV, and this receiver using the S-video cables, composite video cables, or component video cables.

- See “Connections 2” on the previous page.

5 Plug the AC power cords of the connected components and this receiver into the AC outlets.

6 When turning on the TV for the first time after the AV COMPU LINK connection, turn the TV volume to the minimum using the TV volume control on the TV.

7 Turn on other connected components first, then turn on this receiver.

- When turning on the VCR, use the remote control supplied with this receiver (press VCR ⏻/I).

The AV COMPU LINK remote control system allows you to use the five basic functions listed below.

Remote control of the TV, DVD player, and VCR using this remote control

See pages 34 and 35 for details.

- Aim the remote control directly at **the remote sensor on each component.**

One-touch video play

Simply by inserting a video cassette without its safety tab into the VCR, you can enjoy the video playback without setting other switches manually. The receiver automatically turns on and changes the source to “VCR” (or “VCR DIGITAL”).
The TV automatically turns on and changes the input mode to the appropriate position so that you can view the playback picture.
When you insert a video cassette with its safety tab, press the play (►) button on the VCR or on the remote control. So, you can get the same result.

One-touch DVD play

Simply by starting playback on the DVD player, you can enjoy the DVD playback without setting other switches manually.

- When the DVD player is connected through the analog input jacks on this receiver (and analog input is selected), the receiver automatically turns on and changes the source to “DVR/DVD” or “DVD MULTI.”
- When the DVD player is connected through the digital input terminal on this receiver (and digital input is selected), the receiver automatically turns on and changes the source to “DVR/DVD DGT.”

The TV automatically turns on and changes the input mode to the appropriate position so that you can view the playback picture.

Automatic selection of TV’s input mode

- When you select “TV” (or “TV DIGITAL”) as the source to play on the receiver, the TV automatically changes the input mode to the TV tuner so that you can watch TV.
- When you select “DVR/DVD” (or “DVR/DVD DGT”), “DVD MULTI,” “VCR” (or “VCR DIGITAL”), or “DBS” (or “DBS DIGITAL”) as the source to play on the receiver, the TV automatically changes the input mode to the appropriate position (either video input 1 or video input 2) so that you can view the playback picture.

NOTE

This function does not work when you connect this receiver and the TV with the AV COMPU LINK EX terminal using a component video cable. In this case, reconnect the TV referring to Case 1 or Case 2 on page 32.

Automatic power on/off

The TV, DVD player, and VCR turn on and off along with the receiver.
When you turn on the receiver;

- If the previously selected source is “TV” (or “TV DIGITAL”) or “DBS” (or “DBS DIGITAL”), only the TV will turn on automatically.
- If the previously selected source is “DVR/DVD” (or “DVR/DVD DGT”) or “DVD MULTI,” the TV and DVD player will turn on automatically.
- If the previously selected source is “VCR” (or “VCR DIGITAL”), the TV and VCR will turn on automatically.

When you turn off the receiver, the TV, DVD player, and VCR will turn off.

NOTE

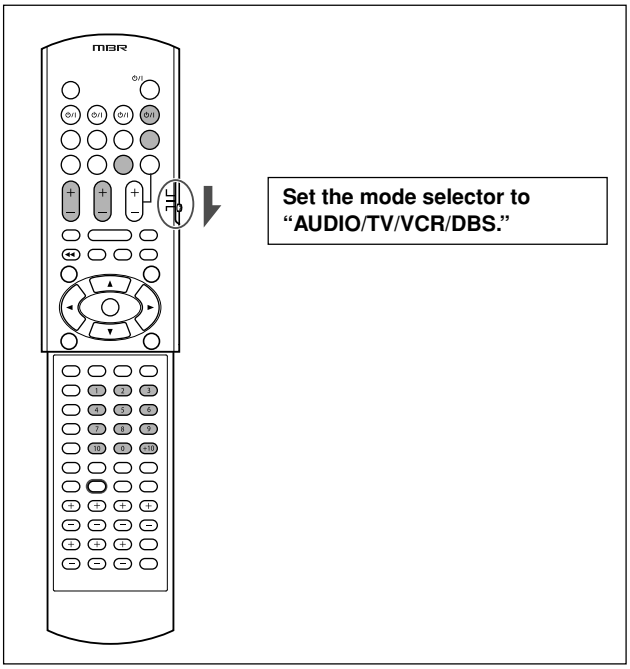
If you turn off the receiver while recording on the VCR, the VCR will not turn off, but continue recording.

Operating other JVC products

You can use the supplied remote control to operate not only this receiver but also other JVC products.

- Refer also to the manuals supplied with the other products.
  – Some JVC VCRs can accept two types of the control signals—remote codes “A” and “B.” This remote control can operate a VCR whose remote control code is set to “A.”
  – Some JVC DVD recorders can accept four types of the control signals. This remote control can operate a DVD recorder whose remote control code is set to the initial code. For details, refer to the manual supplied with the DVD recorder.
- To operate other products, aim the remote control directly at the remote sensor on the target product.

■ TV



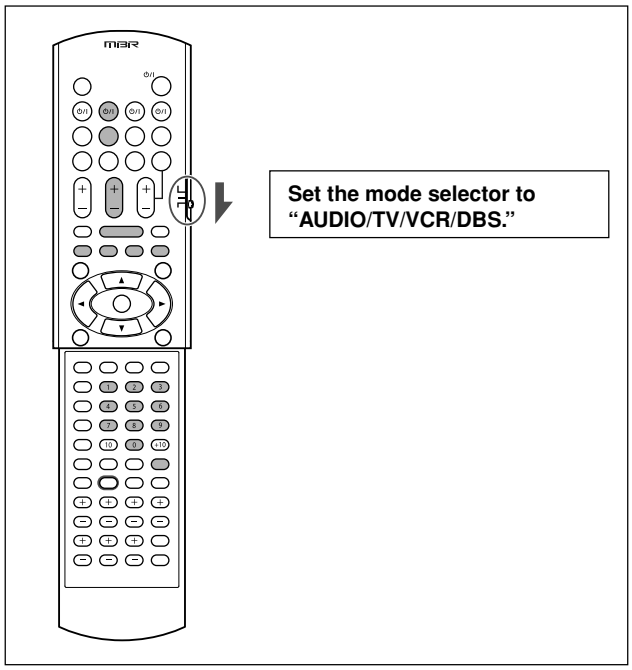
You can always perform the following operations:

TV ⏻/I:	Turn on or off the TV.
TV VOL +/–:	Adjust the volume on the TV.
TV/VIDEO:	Change the input mode (either video input or TV tuner) on the TV.

After pressing TV, you can perform the following operations on the TV.

CHANNEL +/–:	Change the channel numbers.
1 – 9, 0, 100+:	Select the channel numbers.
TV RETURN (10):	Function as the TV RETURN button. (Switches between the previous channel and the current channel.)

■ VCR



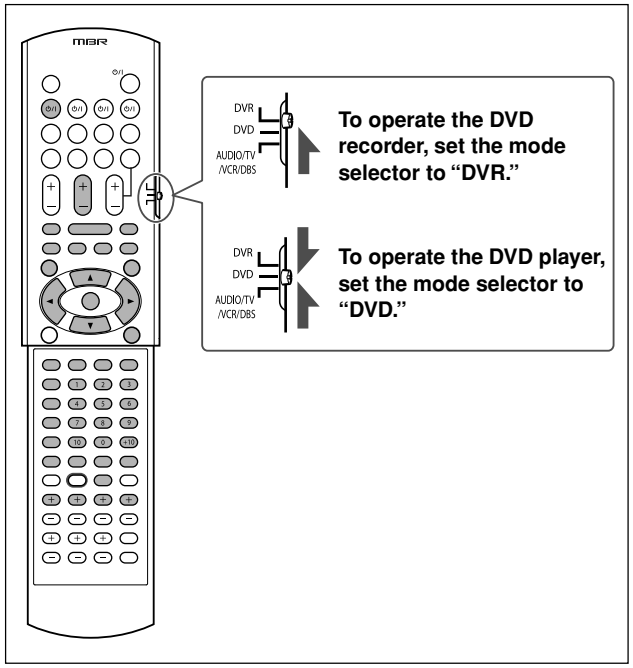
You can always perform the following operation:

VCR ⏻/I:	Turn on or off the VCR.

After pressing VCR, you can perform the following operations on the VCR.

CHANNEL +/–:	Change the channel numbers on the VCR.
1 – 9, 0:	Select the channel numbers on the VCR.
►:	Start playback.
■:	Stop playback.
II:	Pause playback. To release it, press ►.
►►:	Fast-wind a tape.
◄◄:	Rewind a tape.
REC PAUSE:	Enter recording pause. To start recording, press this button then ►.

■ DVD recorder or DVD player



After setting the mode selector correctly, you can perform the following operations on the DVD recorder or DVD player.

See the instructions supplied with the DVD recorder or DVD player for details.

DVR/DVD ⏻/I:	Turn on or off the DVD recorder or DVD player.
►:	Start playback.
■:	Stop playback.
II:	Pause playback. To release it, press ►.
►►I:	Skip to the beginning of the next chapter.
I◄◄:	Return to the beginning of the current (or previous) chapter.
►►:	Fast-forward playback.
◄◄:	Fast-reverse playback.
TOP MENU/MENU:	Display the menu recorded on discs.
ON SCREEN:	Shows the on-screen bar.
▲/▼/►/◄:	Select an item on the menu screen.
ENTER:	Enter the selected item, channel number, chapter/title number, or track number (if required).

You can also use the following buttons to operate JVC DVD recorder and/or DVD player if it supports the corresponding function:

For various settings:

AUDIO*:	Select the audio language/channel.
SUBTITLE:	Select the subtitle language.
SET UP:	Display the Preference display.
VFP:	Show the picture adjustment screen.
PROGRESSIVE*:	Change the scanning mode.
ANGLE:	Select the view angle.

* Press and hold when using these buttons.

For various playback:

↶ (one touch replay):	Move the playback position back 10 seconds before the current position.
RETURN:	Return to the main menu during menu operation.
CANCEL:	Cancel the programmed track, etc.

Only for DVD recorder operations:

CHANNEL +/–:	Change the channel numbers.
DVD/HDD:	Select the DVD recorder or HDD deck. (Only for a DVD recorder incorporated with HDD deck.)
↷ (skip):	Move the playback position ahead 30 seconds after the current position.
1 – 9, 0:	Select a channel number (while stopped) or a chapter/title number, track number (while playing back). Press ENTER to enter the number.
REC MODE:	Select the recording mode.
REC PAUSE:	Enter recording pause. To start recording, press ►.
DISPLAY:	Change the display information.

Only for DVD player operations:

fs/Rate:	Show the sampling frequency.
TITLE/GROUP:	Make the numeric buttons work for selecting the title/group number.
ZOOM:	Zoom in and out.
1 – 10, 0, +10:	Select a chapter/title number, track number, menu item, etc.
DVD/CARD:	Select the disc or memory card to play. (Only for a DVD player incorporated with memory card slots.)
DIMMER:	Change the display brightness.
THUMBNAIL:	Show the thumbnail screen for JPEG discs.
SLIDE:	Start the slide show playback for JPEG discs.
3D/S.EFFECT:	Apply the 3D effect.
PAGE:	Show browsable still pictures recorded on DVD-Audio discs.

If these buttons do not function normally, use the remote control supplied with your DVD recorder or DVD player. Refer also to the manuals supplied with the DVD recorder or DVD player for details.

Operating other manufacturers' products

By changing the transmittable signals, you can use the supplied remote control to operate other manufacturers' products.

- Refer also to the manuals supplied with the other products.
- To operate those components with the remote control, first you need to set the manufacturers' codes each for the CATV converter, DBS tuner, VCR, and TV.
- After replacing batteries of the remote control, set the manufacturers' codes again.

❑ Changing the transmittable signals for operating a TV

Set the mode selector to "AUDIO/TV/VCR/DBS."

1 **Press and hold TV ⏻/I.**

2 **Press TV.**

3 **Enter the manufacturer's code using buttons 1 – 9, and 0.**

See "Manufacturers' codes for TV" on the right.

4 **Release TV ⏻/I.**

Now, you can perform the following operations on the TV.

TV ⏻/I:	Turn on or off the TV.
TV VOL +/–:	Adjust the volume on the TV.
TV/VIDEO:	Change the input mode (either TV or VIDEO).

After pressing TV, you can perform the following operations on the TV.

CHANNEL +/–:	Change the channel numbers.
1 – 9, 0, 100+ (+10):	Select the channel numbers.

See the instructions supplied with the TV for details.

5 **Try to operate your TV by pressing TV ⏻/I.**

When your TV turns on or off, you have entered the correct code.

If more than one code is listed for your brand of TV, try each one until the correct one is entered.

Manufacturers' codes for TV

Manufacturer	Codes
JVC	01
Akai	02
Bell+Howell	03
Centurion	04
Coronad	05
Daewoo	06, 07, 08
Emerson	09, 10, 11, 12, 13
Fisher	14
GE•Pana	15, 16
GE•RCA	17
Gold Star	18, 19
Hitachi	20, 21
KTV	22, 23
Magnavox	24
Marantz	25
Mitsubishi	25
Panasonic	26, 27
Philips	24
Pioneer	28
Proscan	29
Quasar	30
Radioshack	31
RCA	02, 17, 32, 33, 34, 35
Samsung	36, 37
Sanyo	14
Sears	38
Sharp	39
Sony	40
Symphonic	41, 42
Toshiba	38
Zenith	43, 44

Initial setting: 01

Manufacturers' codes are subject to change without notice. If they are changed, this remote control cannot operate the equipment.

❑ Changing the transmittable signals for operating a VCR

Set the mode selector to "AUDIO/TV/VCR/DBS."

1 **Press and hold VCR ⏻/I.**

2 **Press VCR.**

3 **Enter the manufacturer's code using buttons 1 – 9, and 0.**

See "Manufacturers' codes for VCR" on the right.

4 **Release VCR ⏻/I.**

Now, you can perform the following operation on the VCR.

VCR ⏻/I:	Turn on or off the VCR.

After pressing VCR, you can perform the following operations on the VCR.

CHANNEL +/–:	Change the channel numbers on the VCR.
1 – 9, 0:	Select the channel numbers on the VCR.
►:	Start playback.
■:	Stop playback.
II:	Pause playback.
►►:	Fast-wind a tape.
◄◄:	Rewind a tape.

See the instructions supplied with the VCR for details.

5 **Try to operate your VCR by pressing VCR ⏻/I.**

When your VCR turns on or off, you have entered the correct code.

If more than one code is listed for your brand of VCR, try each one until the correct one is entered.

Manufacturers' codes for VCR

Manufacturer	Codes
JVC	01, 02, 03, 04
Aiwa	05
Akai	06, 07, 08
Bell+Howell	09
Daewoo	10
Emerson	11, 12, 13, 14, 15
Fisher	16, 17, 18, 19
G.E.	20, 21
Go Video	22
Gold Star	23
Go-Video A	24
Go-Video B	25
Hitachi	20, 26
Magnavox	27, 28, 29
Mitsubishi	30, 31, 32, 33
NEC	34, 35
Panasonic	36, 37
Philips	27
RCA	38
Samsung	39, 40, 41
Sanyo	16, 17, 18, 19
Scott	42
Sharp	43, 44
Shintom	45
Sony	46, 47, 48, 49, 50, 51
Symphonic	52
Teknica	53, 54
Toshiba	55
Zenith	56

Initial setting: 01

Manufacturers' codes are subject to change without notice. If they are changed, this remote control cannot operate the equipment.

❑ Changing the transmittable signals for operating a CATV converter or DBS tuner

Set the mode selector to "AUDIO/TV/VCR/DBS."

1 **Press and hold DBS ⏻/I.**

2 **Press DBS.**

3 **Enter the manufacturer's code using buttons 1 – 9, and 0.**

See "Manufacturers' codes for CATV converter" or "Manufacturers' codes for DBS tuner" below.

4 **Release DBS ⏻/I.**

Now, you can perform the following operation on the CATV converter or DBS tuner.

DBS ⏻/I:	Turn on or off the CATV converter or DBS tuner.

After pressing DBS, you can perform the following operations on the CATV converter or DBS tuner.

CHANNEL +/–:	Change the channel numbers on the CATV converter or DBS tuner.
1 – 9, 0:	Select the channel numbers on the CATV converter or DBS tuner.

See the instructions supplied with the CATV converter or DBS tuner for details.

5 **Try to operate your CATV converter or DBS tuner by pressing DBS ⏻/I.**

When your CATV converter or DBS tuner turns on or off, you have entered the correct code.

If more than one code is listed for your brand of CATV converter or DBS tuner, try each one until the correct one is entered.

Manufacturers' codes for CATV converter

Manufacturer	Codes
G.I.	01
Gemini	02
Hamlin	03, 04, 05, 06
Jerrold	07, 08, 09, 10, 11, 12, 13, 14, 15
Macom	16, 17, 18
Magnavox	19
Oak	20, 21, 22
Panasonic	23, 24
Philips	25, 26, 27, 28, 29, 30
Pioneer	31, 32
S. Atlanta	33, 34, 35
Samsung	36
Tocom	37
Zenith	38, 39

Manufacturers' codes for DBS tuner

Manufacturer	Codes
Echostar	40
G.I.	41
Hitachi	42
Hughes	43
Panasonic	44
Primestar	45
RCA	46
Sony	47
Toshiba	48

Initial setting: 01

❑ Changing the transmittable signals for operating a DVD player

Set the mode selector to "DVD."

1 **Press and hold DVR/DVD ⏻/I.**

2 **Press DVR/DVD.**

3 **Enter the manufacturer's code using buttons 1 – 9, and 0.**

See "Manufacturers' codes for DVD player" below.

4 **Release DVR/DVD ⏻/I.**

Now, you can perform the following operation on the DVD player.

DVR/DVD ⏻/I:	Turn on or off the DVD player.
►:	Start playback.
◄◄:	Retun to the beginning of the current chapter (or fast-forward for some models).
►►:	Skip to the beginning of the next chapter (or fast-reverse for some models).
■:	Stop playback.
II:	Pause playback.
MENU:	Display the menu recorded on DVD VIDEO discs.
▲/▼/►/◄:	Select an item on the menu screen.
ENTER:	Enter the selected item.
1 – 9, 0:	Select the chapter number.

See the instructions supplied with the DVD player for details.

5 **Try to operate your DVD player by pressing DVR/DVD ⏻/I.**

When your DVD player turns on or off, you have entered the correct code.

If more than one code is listed for your brand of DVD player, try each one until the correct one is entered.

Manufacturers' codes for DVD player

Manufacturer	Codes
JVC	01
Hitachi	12
Kenwood	05, 08
Mitsubishi	10
Onkyo	15, 16
Panasonic	04
Philips	07
Pioneer	03
Samsung	14
Sony	02
Toshiba	06
Yamaha	09

Initial setting: 01

NOTE

You cannot use this remote control to operate other manufacturers' DVD recorder.

Manufacturers' codes are subject to change without notice. If they are changed, this remote control cannot operate the equipment.

Troubleshooting

Use this chart to help you solve daily operational problems. If there are any problems you cannot solve, contact your JVC's service center.

	PROBLEM	POSSIBLE CAUSE	SOLUTION
Power	The power does not come on.	The power cord is not plugged in.	Plug the power cord into an AC outlet.
	The receiver turns off (enters standby mode).	Speakers are overloaded because of high volume.	1. Stop the playback source. 2. Turn on the receiver again, then turn the volume down.
		Speakers are overloaded because of a short circuit at the speaker terminals.	Check the speaker wiring. If speaker wiring is not short-circuited, contact your dealer.
		The receiver is overloaded because of a high voltage.	Consult your dealer after unplugging the power cord.
	"OVER HEAT" flashes on the display, then the receiver turns off.	The receiver is overloaded because of high volume or long time usage.	Turn on the receiver again. If the receiver turns off soon, consult your dealer after unplugging the power cord.
Sound	No sound from speakers.	Speaker signal cables are not connected.	Check speaker wiring, then reconnect if necessary (see page 6) after unplugging the power cord.
		Connections are incorrect.	Check the audio connections (see pages 7 to 11) after unplugging the power cord.
		An incorrect source is selected.	Select the correct source.
		Muting is activated.	Press MUTING to cancel the mute (see page 15).
		An incorrect input mode (analog or digital) is selected.	Select the correct input mode (analog or digital).
		TV Direct is activated.	Deactivate TV Direct (see page 14).
	Sound from one speaker only.	Speaker signal cables are not connected properly.	Check speaker wiring and reconnect if necessary (see page 6) after unplugging the power cord.
	Bass sound is reinforced too much when listening in stereo.	Appropriate bass level is not selected.	Adjust audio position level (see page 14).
	Sounds are intermittently distorted by the outside noise such as a lightning discharge.	When you use the digital coaxial connection, the sounds may be intermittently distorted by the outside noise such as a lightning discharge but the sound will be restored automatically.	This is not a malfunction.
Remote control	Remote control does not operate as you intend.	The remote control is not ready for your intended operation.	Set the mode selector correctly, then press the corresponding source selecting button or SOUND before operation.
	Remote control does not work.	There is an obstruction hiding the remote sensor on the receiver.	Remove the obstruction.
		Batteries are weak.	Replace batteries.
		The mode selector is set to the incorrect position.	Set the mode selector to the proper position.
	Buttons cannot be used.	TV Direct is activated.	Deactivate TV Direct (see page 14).
Tuner	Continuous hiss or buzzing during FM reception.	Incoming signal is too weak.	Connect an outdoor FM antenna or contact your dealer.
		The station is too far away.	Select another station.
		The wrong antenna is being used.	Check with your dealer to be sure you have the correct antenna.
		Antennas are not connected properly.	Check the connections.
	Occasional cracking noise during FM reception.	Ignition noise from automobiles.	Move the antenna farther from automobile traffic.

Specifications

Designs and specifications are subject to change without notice.

Amplifier

Output Power

At stereo operation:

Front channels: **100 W per channel, min. RMS, both channels driven into 6 Ω at 40 Hz to 20 kHz with no more than 0.8% total harmonic distortion.**

At surround operation:

Front channels: 100 W per channel, min. RMS, driven into 6 Ω at 1 kHz with no more than 0.8% total harmonic distortion.

Center channel: 100 W, min. RMS, driven into 6 Ω at 1 kHz, with no more than 0.8% total harmonic distortion.

Surround channels: 100 W per channel, min. RMS, driven into 6 Ω at 1 kHz, with no more than 0.8% total harmonic distortion.

Surround back channel: 100 W, min. RMS, driven into 6 Ω at 1 kHz, with no more than 0.8% total harmonic distortion.

Audio

Audio Input Sensitivity/Impedance:

DVR/DVD (DVD MULTI), VCR, DBS, TV: 330 mV/47 kΩ

Audio Input (DIGITAL IN)*:

Coaxial: DIGITAL IN 1(DVR/DVD): 0.5 V(p-p)/75 Ω

Optical: DIGITAL IN 2(DBS), 3(VCR): –21 dBm to –15 dBm (660 nm ±30 nm)

* Corresponding to Linear PCM, Dolby Digital, and DTS (with sampling frequency—32 kHz, 44.1 kHz, 48 kHz).

Audio Output Level:

DVR, VCR, MONITOR OUT: 330 mV

Signal-to-Noise Ratio ('66 IHF/DIN): 80 dB/62 dB

Frequency Response (6 Ω): 20 Hz to 20 kHz (±1 dB)

Bass Boost: +4 dB ±1 dB at 100 Hz

Equalization (at DSP operation):

Center frequency: 63 Hz, 250 Hz, 1 kHz, 4 kHz, 16 kHz

Control range: ±8 dB

Video

Video Input Sensitivity/Impedance:

Composite video: DVR/DVD, VCR, DBS: 1 V(p-p)/75 Ω

S-video: DVR/DVD, VCR, DBS:

Y (luminance): 1 V(p-p)/75 Ω

C (chrominance, burst): 0.286 V(p-p)/75 Ω

Component: DVR/DVD, VCR:

Y (luminance): 1 V(p-p)/75 Ω

P_B, P_R: 0.7 V(p-p)/75 Ω

Video Output Level/Impedance:

Composite video: DVR, VCR, MONITOR OUT: 1 V(p-p)/75 Ω

S-video: DVR, VCR, MONITOR OUT:

Y (luminance): 1 V(p-p)/75 Ω

C (chrominance, burst): 0.286 V(p-p)/75 Ω

Component: MONITOR OUT:

Y (luminance): 1 V(p-p)/75 Ω

P_B, P_R: 0.7 V(p-p)/75 Ω

Synchronization: Negative

FM tuner (IHF)

Tuning Range: 87.5 MHz to 108.0 MHz

Usable Sensitivity:

Monaural: 12.8 dBf (1.2 µV/75 Ω)

50 dB Quieting Sensitivity:

Monaural: 16.0 dBf (1.7 µV/75 Ω)

Stereo: 37.5 dBf (20.5 µV/75 Ω)

Stereo Separation at REC OUT: 35 dB at 1 kHz

AM tuner

Tuning Range: 530 kHz to 1 710 kHz

General

Power Requirements: AC 120 V~, 60 Hz

Power Consumption: 120 W/160 VA (at operation)
2 W (in standby mode)

Dimensions (W x H x D): 435 mm x 70 mm x 329.5 mm (17 3/16 inches x 2 13/16 inches x 13 inches)

Mass: 6.3 kg (13.9 lbs)

JVC

LIMITED WARRANTY

AUDIO-2

JVC COMPANY OF AMERICA warrants this product and all parts thereof, except as set forth below ONLY TO THE ORIGINAL PURCHASER AT RETAIL to be FREE FROM DEFECTIVE MATERIALS AND WORKMANSHIP from the date of original retail purchase for the period as shown below. ("The Warranty Period")

PARTS	LABOR
2 YRS	**2 YRS**

THIS LIMITED WARRANTY IS VALID ONLY IN THE FIFTY (50) UNITED STATES, THE DISTRICT OF COLUMBIA AND IN COMMONWEALTH OF PUERTO RICO.

WHAT WE WILL DO:
If this product is found to be defective, JVC will repair or replace defective parts at no charge to the original owner. Such repair and replacement services shall be rendered by JVC during normal business hours at JVC authorized service centers. Parts used for replacement are warranted only for the remainder of the Warranty Period. All products and parts thereof may be brought to a JVC authorized service center on a carry-in basis except for Television sets having a screen size 25 inches and above which are covered on an in-home basis.

WHAT YOU MUST DO FOR WARRANTY SERVICE:
Return your product to a JVC authorized service center with a copy of your bill of sale. For your nearest JVC authorized service center, please call toll free: (800) 537-5722.

If service is not available locally, box the product carefully, preferably in the original carton, and ship, insured, with a copy of your bill of sale plus a letter of explanation of the problem to the nearest JVC Factory Service Center, the name and location of which will be given to you by the toll-free number.

If you have any questions concerning your JVC Product, please contact our Customer Relations Department.

WHAT IS NOT COVERED:
This limited warranty provided by JVC does not cover:

1. Products which have been subject to abuse, accident, alteration, modification, tampering, negligence, misuse, faulty installation, lack of reasonable care, or if repaired or serviced by anyone other than a service facility authorized by JVC to render such service, or if affixed to any attachment not provided with the products, or if the model number or serial number has been altered, tampered with, defaced or removed;
2. Initial installation and installation and removal for repair;
3. Operational adjustments covered in the Owner's Manual, normal maintenance, video and audio head cleaning;
4. Damage that occurs in shipment, due to act of God, and cosmetic damage;
5. Signal reception problems and failures due to line power surge;
6. Video Pick-up Tubes/CCD Image Sensor, Cartridge, Stylus (Needle) are covered for 90 days from the date of purchase;
7. Batteries (except that Rechargeable Batteries are covered for 90 days from the date of purchase);

There are no express warranties except as listed above.

THE DURATION OF ANY IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY, IS LIMITED TO THE DURATION OF THE EXPRESS WARRANTY HEREIN.

JVC SHALL NOT BE LIABLE FOR THE LOSS OF USE OF THE PRODUCT, INCONVENIENCE, LOSS OR ANY OTHER DAMAGES, WHETHER DIRECT, INCIDENTAL OR CONSEQUENTIAL (INCLUDING, WITHOUT LIMITATION, DAMAGE TO TAPES, RECORDS OR DISCS) RESULTING FROM THE USE OF THIS PRODUCT, OR ARISING OUT OF ANY BREACH OF THIS WARRANTY. ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE, ARE LIMITED TO THE WARRANTY PERIOD SET FORTH ABOVE.

Some states do not allow the exclusion of incidental or consequential damages or limitations on how long an implied warranty lasts, so these limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

JVC COMPANY OF AMERICA
DIVISION OF JVC AMERICAS CORP.

1700 Valley Road
Wayne, NJ 07470

REFURBISHED PRODUCTS CARRY A SEPARATE WARRANTY, THIS WARRANTY DOES NOT APPLY. FOR DETAILS OF REFURBISHED PRODUCT WARRANTY, PLEASE REFER TO THE REFURBISHED PRODUCT WARRANTY INFORMATION PACKAGED WITH EACH REFURBISHED PRODUCT.

For customer use:

Enter below the Model No. which is located either on the rear, bottom or side of the cabinet. Retain this information for future reference.

Model No. : _____ Serial No. : _____

Purchase data : _____ Name of dealer : _____

Authorized Service Centers

QUALITY JVC® SERVICE

HOW TO LOCATE YOUR JVC SERVICE CENTER

TOLL FREE: 1 (800) 537-5722

http://www.jvc.com

Dear Customer,
In order to receive the most satisfaction from your purchase,please read the instruction booklet before operating the unit.In the event that repairs are necessary, please call 1 (800)537-5722 for your nearest authorized servicer or visit our website at **www.JVC.com**
Remember to retain your Bill of Sale for Warranty Service.

Do not service the television yourself

Caution
To prevent electrical shock,do not open the cabinet.There are no user serviceable parts inside.Please refer to qualified service personnel for repairs.

Accessories
To purchase accessories for your JVC product,please call toll free:1 (800)882-2345 or on the web at **www.JVC.com**

BT-51002-5
(0301)

RX-F10S

HOME THEATER RECEIVER

JVC

VICTOR COMPANY OF JAPAN, LIMITED

EN

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0404MWMMDWJEIN

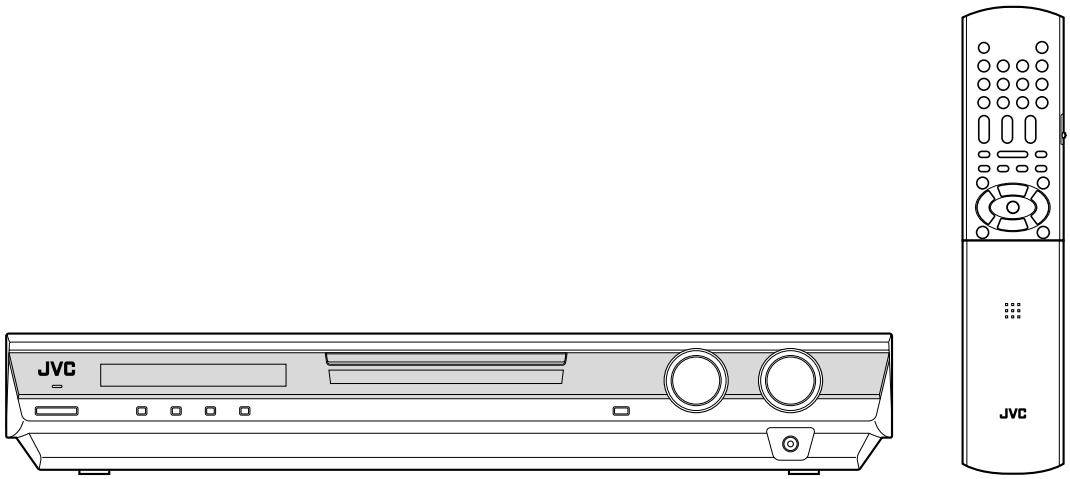
JVC

English

Français

HOME THEATER RECEIVER
RECEPTEUR POUR CINEMA MAISON

RX-F10S



DOLBY DIGITAL • EX PRO LOGIC II

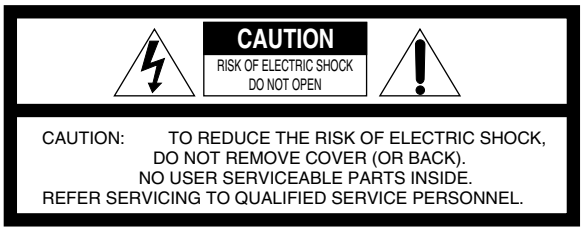
dts 96 24 ES NEO:6

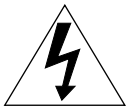
AV COMPU LINK

INSTRUCTIONS
MANUEL D'INSTRUCTIONS

LVT1163-002A
[C]

Warnings, Cautions, and Others
Mises en garde, précautions et indications diverses


CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with arrowhead symbol, within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION
To reduce the risk of electrical shocks, fire, etc.:
1. Do not remove screws, covers or cabinet.
2. Do not expose this appliance to rain or moisture.

ATTENTION
Afin d'éviter tout risque d'électrocution, d'incendie, etc.:
1. Ne pas enlever les vis ni les panneaux et ne pas ouvrir le coffret de l'appareil.
2. Ne pas exposer l'appareil à la pluie ni à l'humidité.

Caution—⏻/I STANDBY/ON button!
Disconnect the mains plug to shut the power off completely. The ⏻/I STANDBY/ON button in any position does not disconnect the mains line. The power can be remote controlled.

Attention—Touche ⏻/I STANDBY/ON!
Déconnectez la fiche d'alimentation secteur pour couper l'alimentation complètement. La touche ⏻/I STANDBY/ON, dans n'importe quelle position, ne déconnecte pas le système du secteur. L'alimentation ne peut pas être télécommandée.

For U.S.A

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.
This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
Reorient or relocate the receiving antenna.
Increase the separation between the equipment and receiver.
Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
Consult the dealer or an experienced radio/TV technician for help.

Note to CATV system installer:
This reminder is provided to call the CATV system installer's attention to Section 820-40 of the NEC which provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

For Canada/pour le Canada

CAUTION: TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT
ATTENTION: POUR EVITER LES CHOCS ELECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQUAU FOND

For Canada/pour Le Canada

THIS DIGITAL APPARATUS DOES NOT EXCEED THE CLASS B LIMITS FOR RADIO NOISE EMISSIONS FROM DIGITAL APPARATUS AS SET OUT IN THE INTERFERENCE-CAUSING EQUIPMENT STANDARD ENTITLED "DIGITAL APPARATUS," ICES-003 OF THE DEPARTMENT OF COMMUNICATIONS.
CET APPAREIL NUMERIQUE RESPECTE LES LIMITES DE BRUITS RADIOELECTRIQUES APPLICABLES AUX APPAREILS NUMERIQUES DE CLASSE B PRESCRITES DANS LA NORME SUR LE MATERIEL BROUILLEUR; "APPAREILS NUMERIQUES", NMB-003 EDICTEE PAR LE MINISTRE DES COMMUNICATIONS.

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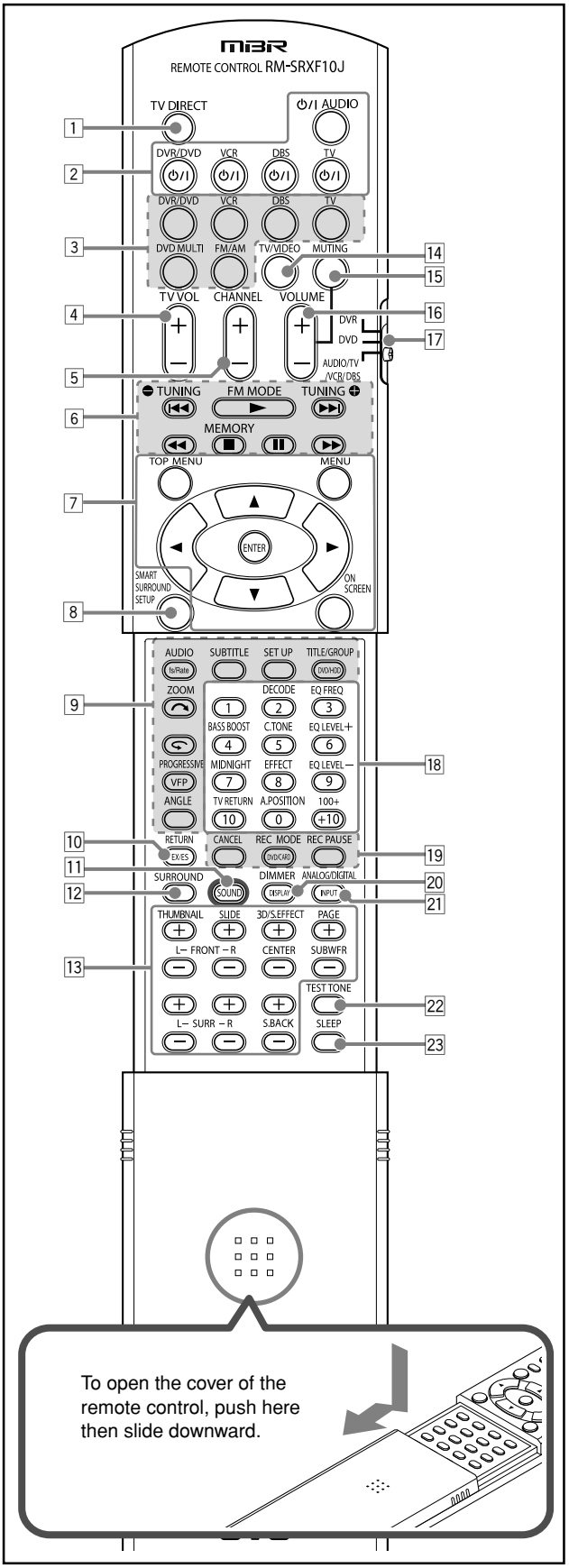
Parts identification



Remote control

See pages in parentheses for details.

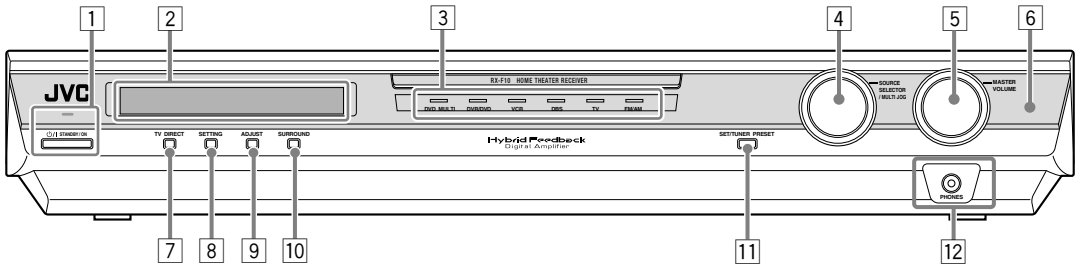
1 TV DIRECT button (14)
2 Standby/on buttons (12, 14, 34 – 38)
⏻/I AUDIO, DVR/DVD ⏻/I, VCR ⏻/I, DBS ⏻/I, TV ⏻/I
3 Source selecting buttons (12, 14, 25, 34, 36 – 38)
DVR/DVD, VCR, DBS, TV, DVD MULTI, FM/AM
4 TV VOL (volume) +/– button (34, 36)
5 CHANNEL +/– button (34 – 38)
6 • Operating buttons for video components (34, 35, 37, 38)
⏮, ▶, ⏭, ◀◀, ■, ⏸, ▶▶
• Operating buttons for tuner (25, 26)
⊖ TUNING, FM MODE, TUNING ⊕, MEMORY
7 Operating buttons for DVD recorder or DVD player* (35, 38)
TOP MENU, MENU, cursor buttons (▶, ◀, ▲, ▼), ENTER, ON SCREEN
8 SMART SURROUND SETUP button (16)
9 Operating buttons for DVD recorder or DVD player* (35)
fs/Rate, AUDIO, SUBTITLE, SET UP, DVD/HDD, TITLE/GROUP, ↷, ZOOM, ↶, VFP, PROGRESSIVE, ANGLE
10 • EX/ES button (20)
• RETURN* button (35)
11 SOUND button (13, 14, 20, 23, 24)
12 SURROUND button (31)
13 • Adjusting buttons for speaker and subwoofer output levels (23)
FRONT L +/–, FRONT R +/–, CENTER +/–, SUBWFR +/–, SURR L +/–, SURR R +/–, S.BACK +/–
• Operating buttons for DVD recorder or DVD player* (35)
THUMBNAIL, SLIDE, 3D/S.EFFECT, PAGE
14 TV/VIDEO button (34, 36)
15 MUTING button (15)
16 VOLUME +/– button (13)
17 Mode selector (12, 14, 16, 20, 23 – 25, 31, 34 – 38)
DVR, DVD, AUDIO/TV/VCR/DBS
18 • Numeric buttons (26, 34 – 38)
• Adjusting buttons (13, 14, 20, 23, 24)
DECODE, EQ FREQ, BASS BOOST, C.TONE, EQ LEVEL +, MIDNIGHT, EFFECT, EQ LEVEL –, A.POSITION
• TV RETURN button (34)
19 Operating buttons for DVD recorder or DVD player* (35)
CANCEL, DVD/CARD, REC MODE, REC PAUSE
20 • DISPLAY* button (35)
• DIMMER button (15, 35)
21 ANALOG/DIGITAL INPUT button (12)
22 TEST TONE button (23)
23 SLEEP button (15)

* These buttons can be used for operating a JVC DVD recorder or DVD player with the mode selector set to “DVR” or “DVD” (see page 35).
If these buttons do not function normally, use the remote control supplied with your DVD recorder or DVD player. Refer also to the manuals supplied with the DVD recorder or DVD player for details.

- **When operating the receiver, set the mode selector (17) to “AUDIO/TV/VCR/DBS.”**
- **When operating a JVC DVD recorder, set the mode selector (17) to “DVR.”**
- **When operating a JVC DVD player, set the mode selector (17) to “DVD.”**

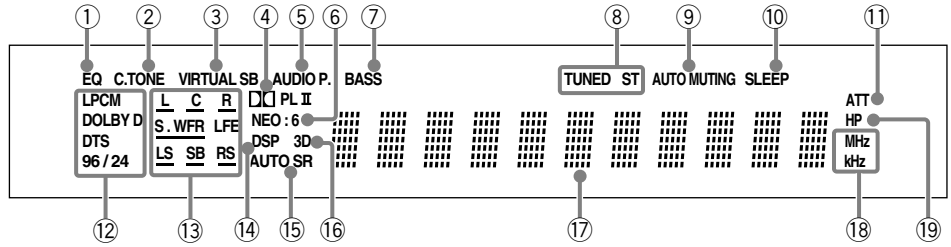
See pages in parentheses for details.

Front panel



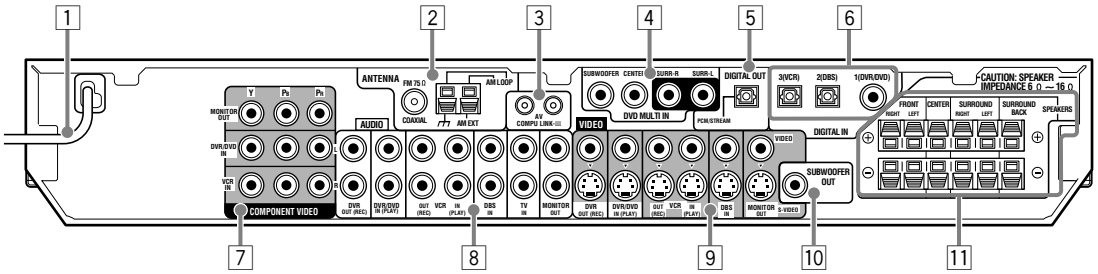
1 ⏻/I STANDBY/ON button and standby lamp (12, 14)
2 Display window (see below)
3 Source lamps
DVD MULTI, DVR/DVD, VCR, DBS, TV, FM/AM
4 • SOURCE SELECTOR (12, 14, 26)
• MULTI JOG (18, 22, 26, 31)
5 MASTER VOLUME control (13)
6 Remote sensor (4)
7 TV DIRECT button (14)
8 SETTING button (18)
9 ADJUST button (22)
10 SURROUND button (31)
11 • SET button (18, 22)
• TUNER PRESET button (26)
12 PHONES jack (13)

Display window



① EQ indicator (24)
② C.TONE indicator (23)
③ VIRTUAL SB indicator (30)
④ PL II indicator (27, 29)
⑤ AUDIO P. (position) indicator (14)
⑥ NEO:6 indicator (28)
⑦ BASS indicator (24)
⑧ Tuner operation indicators (25)
TUNED, ST (stereo)
⑨ AUTO MUTING indicator (26)
⑩ SLEEP indicator (15)
⑪ ATT (attenuator) indicator (24)
⑫ Digital signal format indicators (13, 27, 28)
LPCM (Linear PCM), DOLBY D (Dolby Digital), DTS, 96/24
⑬ Signal and speaker indicators (15)
⑭ DSP indicator (28, 29)
⑮ AUTO SR (surround) indicator (21)
⑯ 3D indicator (28, 29)
⑰ Main display
⑱ Frequency unit indicators
MHz (for FM station), kHz (for AM station)
⑲ HP (headphones) indicator (13, 28, 29)

Rear panel



1 Power cord (11)
2 ANTENNA terminals (5)
3 AV COMPU LINK-III terminals (32)
4 DVD MULTI IN jacks (8)
SUBWOOFER, CENTER, SURR-R, SURR-L
5 DIGITAL OUT terminal (11)
6 DIGITAL IN terminals (11)
• Coaxial: 1(DVR/DVD)
• Optical: 2(DBS), 3(VCR)
7 COMPONENT VIDEO (Y, P_B, P_R) jacks (7 – 10)
MONITOR OUT, DVR/DVD IN, VCR IN
8 AUDIO jacks (7 – 10)
• Input: DVR/DVD IN (PLAY), VCR IN (PLAY), DBS IN, TV IN
• Output: DVR OUT (REC), VCR OUT (REC), MONITOR OUT
9 VIDEO terminals (7 – 10)
VIDEO (composite video) jacks, S-VIDEO terminals
• Input: DVR/DVD IN (PLAY), VCR IN (PLAY), DBS IN
• Output: DVR OUT (REC), VCR OUT (REC), MONITOR OUT
10 SUBWOOFER OUT jack (6)
11 SPEAKERS terminals (6)
FRONT, CENTER, SURROUND, SURROUND BACK

Getting started

Before Installation

General precautions

- Be sure your hands are dry.
- Turn the power off to all components.
- Read the manuals supplied with the components you are going to connect.

Locations

- Install the receiver in a location that is level and protected from moisture and dust.
- The temperature around the receiver must be between –5˚C and 35˚C.
- Make sure there is good ventilation around the receiver. Poor ventilation could cause overheating and damage the receiver.
- Leave sufficient distance between the receiver and the TV.

Handling the receiver

- Do not insert any metal object into the receiver.
- Do not disassemble the receiver or remove screws, covers, or cabinet.
- Do not expose the receiver to rain or moisture.
- Do not pull on the power cord to unplug the cord. When unplugging the cord, always grasp the plug so as not to damage the cord.
- When you are away on travel or otherwise for an extended period or time, remove the plug from the wall outlet. A small amount of power is always consumed while the power cord is connected to the wall outlet.

The receiver has a built-in cooling fan which operates while the receiver is turned on. Be sure to leave enough ventilation to obtain sufficient cooling effect.

CAUTION:

Do not connect the AC power plug to the wall outlet until all connections are completed.

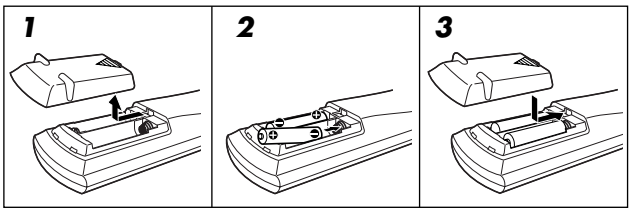
Checking the supplied accessories

Check to be sure you have all of the following supplied accessories. If anything is missing, contact your dealer immediately.

- Remote control (× 1)
- Batteries (× 2)
- AM loop antenna (× 1)
- FM antenna (× 1)
- Digital coaxial cable (× 1)

Putting batteries in the remote control

Before using the remote control, put two supplied batteries first.



1 Press and slide the battery cover on the back of the remote control.

2 Insert batteries.

Make sure to match the polarity: (+) to (+) and (–) to (–).

3 Replace the cover.

If the range or effectiveness of the remote control decreases, replace the batteries. Use two R6(SUM-3)/AA(15F) type dry-cell batteries.

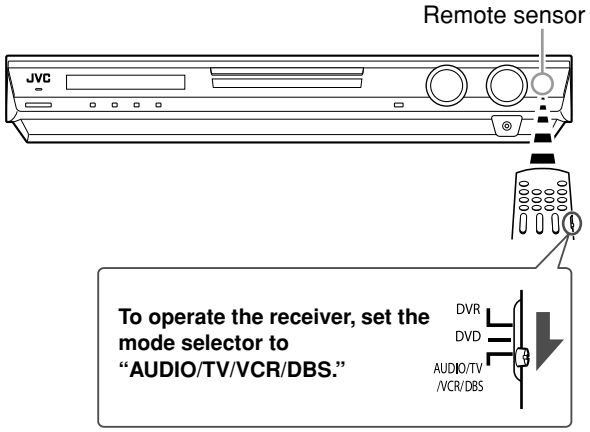
- Supplied butteries are for initial setup. Replace for continued use.

CAUTION:

Follow these precautions to avoid leaking or cracking cells:

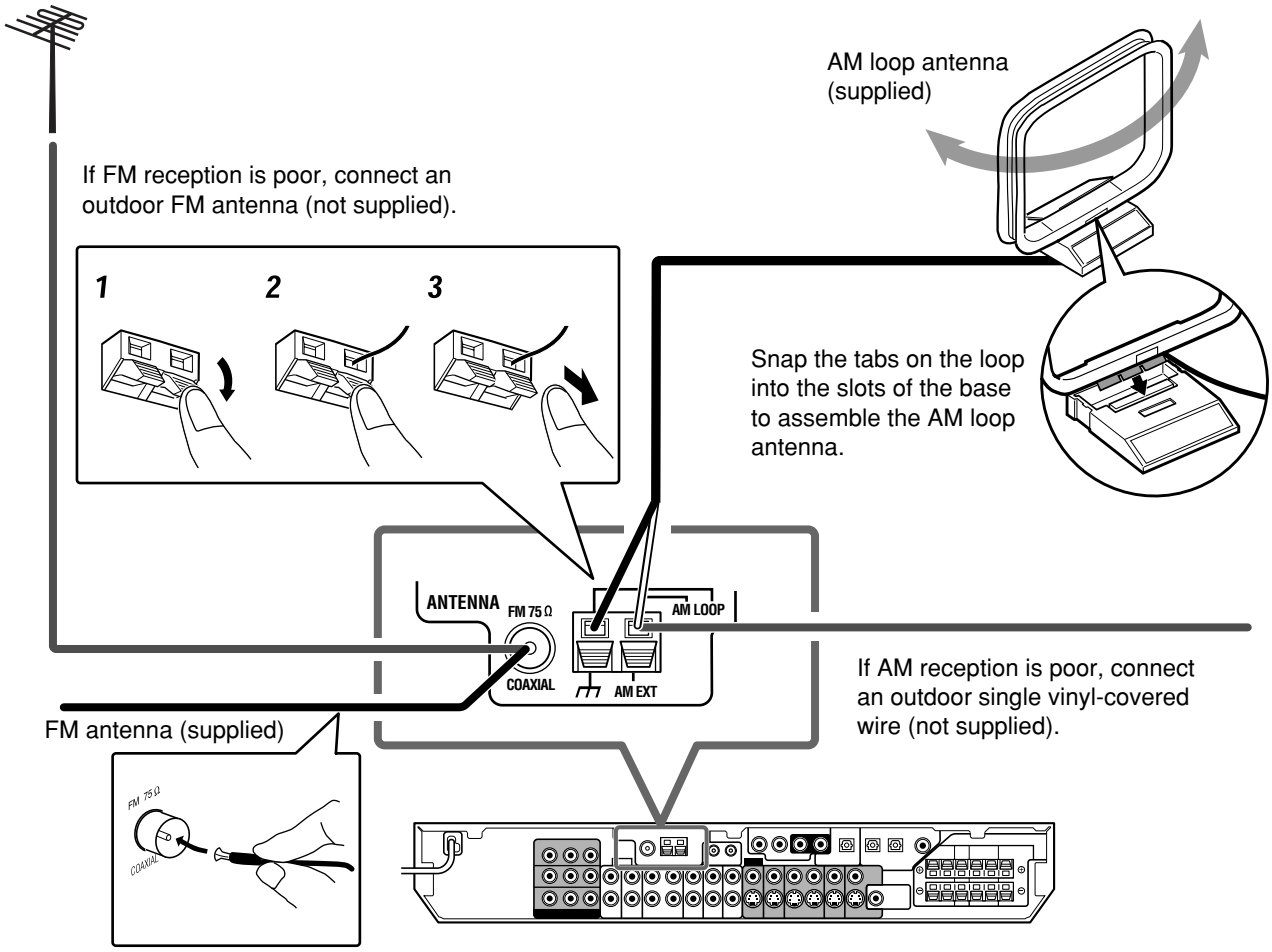
- Place batteries in the remote control so they match the polarity: (+) to (+) and (–) to (–).
- Use the correct type of batteries. Batteries that look similar may differ in voltage.
- Always replace both batteries at the same time.
- Do not expose batteries to heat or flame.

When using the remote control, aim the remote control directly at the remote sensor on the front panel.



Connecting the FM and AM antennas

Do not connect the AC power plug to the wall outlet until all connections are completed.



AM antenna connection

Connect the AM loop antenna supplied to the AM LOOP terminals. Connect the white cord to the AM EXT terminal, and connect the black cord to the ⏚ terminal.
Turn the loop until you have the best reception.

- If the reception is poor, connect an outdoor single vinyl-covered wire (not supplied) to the AM EXT terminal. Keep the AM loop antenna connected.

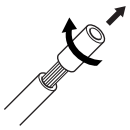
FM antenna connection

Connect the FM antenna supplied to the FM 75 Ω COAXIAL terminal as a temporary measure.
Extend the supplied FM antenna horizontally.

- If the reception is poor, connect an outdoor FM antenna (not supplied). Before attaching a 75 Ω coaxial cable with a connector, disconnect the supplied FM antenna.

NOTES

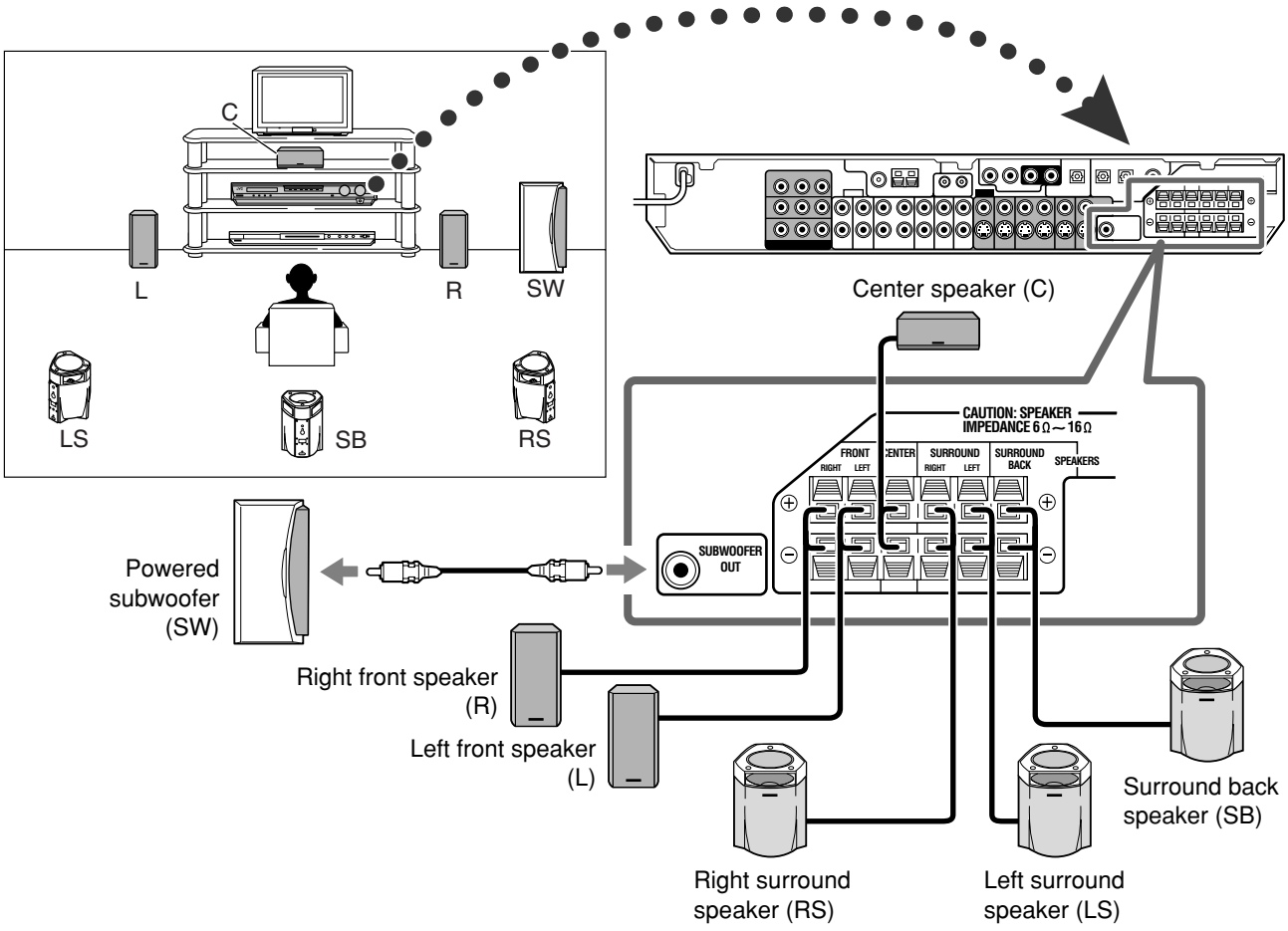
- If the AM loop antenna wire is covered with vinyl, remove the vinyl while twisting it as shown on the right.
- Make sure the antenna conductors do not touch any other terminals, connecting cords and power cord. This could cause poor reception.



Connecting the speakers

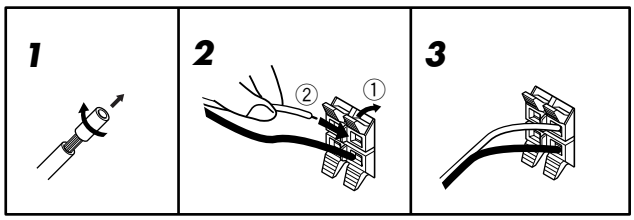
Do not connect the AC power plug to the wall outlet until all connections are completed.

Speaker Layout Diagram



Connecting the speakers

Turn off all components before making connections.



1 **Twist and remove the insulation at the end of each speaker cord.**

2 **Press and hold the clamp of the speaker terminal (①), then insert the speaker cord (②).**

- For each speaker, connect the (+) and (–) terminals on the rear panel to the (+) and (–) terminals marked on the speakers.

3 **Release the finger from the clamp.**

CAUTIONS:

- Use speakers with the SPEAKER IMPEDANCE indicated by the speaker terminals (6 Ω – 16 Ω).
- DO NOT connect more than one speaker to one speaker terminal.

Connecting the powered subwoofer

By connecting a subwoofer, you can enhance the bass or reproduce the original LFE signals recorded in digital software.

Connect the input jack of a powered subwoofer to the SUBWOOFER OUT jack on the rear panel, using a cord with RCA pin plugs (not supplied).

- Refer also to the manual supplied with your subwoofer.

After connecting all the speakers and/or a subwoofer, set the speaker setting information properly to obtain the best possible surround effect. For details, see pages 16 to 19.

NOTE

You can place a subwoofer wherever you like since bass sound is non-directional. Normally place it in front of you.

Connecting video components

Do not connect the AC power plug to the wall outlet until all connections are completed.

This receiver is equipped with the following video terminals—composite video, S-video, and component video terminals.

- If your video components have S-video (Y/C-separation) and/or component video (Y, P_B, P_R) jacks, connect them using an S-video cable (not supplied) or component video cable (not supplied). By using these terminals, you can get a better picture quality in the order:

Component > S-video > Composite

IMPORTANT:

The video signals from one type of these input jacks are transmitted only through the video output jacks of the same type. Therefore, if a recording video component and a playing video component are connected to the receiver through the video terminals of different type, you cannot record the picture. In addition, if the TV and a playing video component are connected to the receiver through the video terminals of different type, you cannot view the playback picture on the TV.

Turn off all components before making connections.

- When you connect other components, refer also to their manuals.

DO NOT use a TV through a VCR or a TV with a built-in VCR; otherwise, the picture may be distorted.

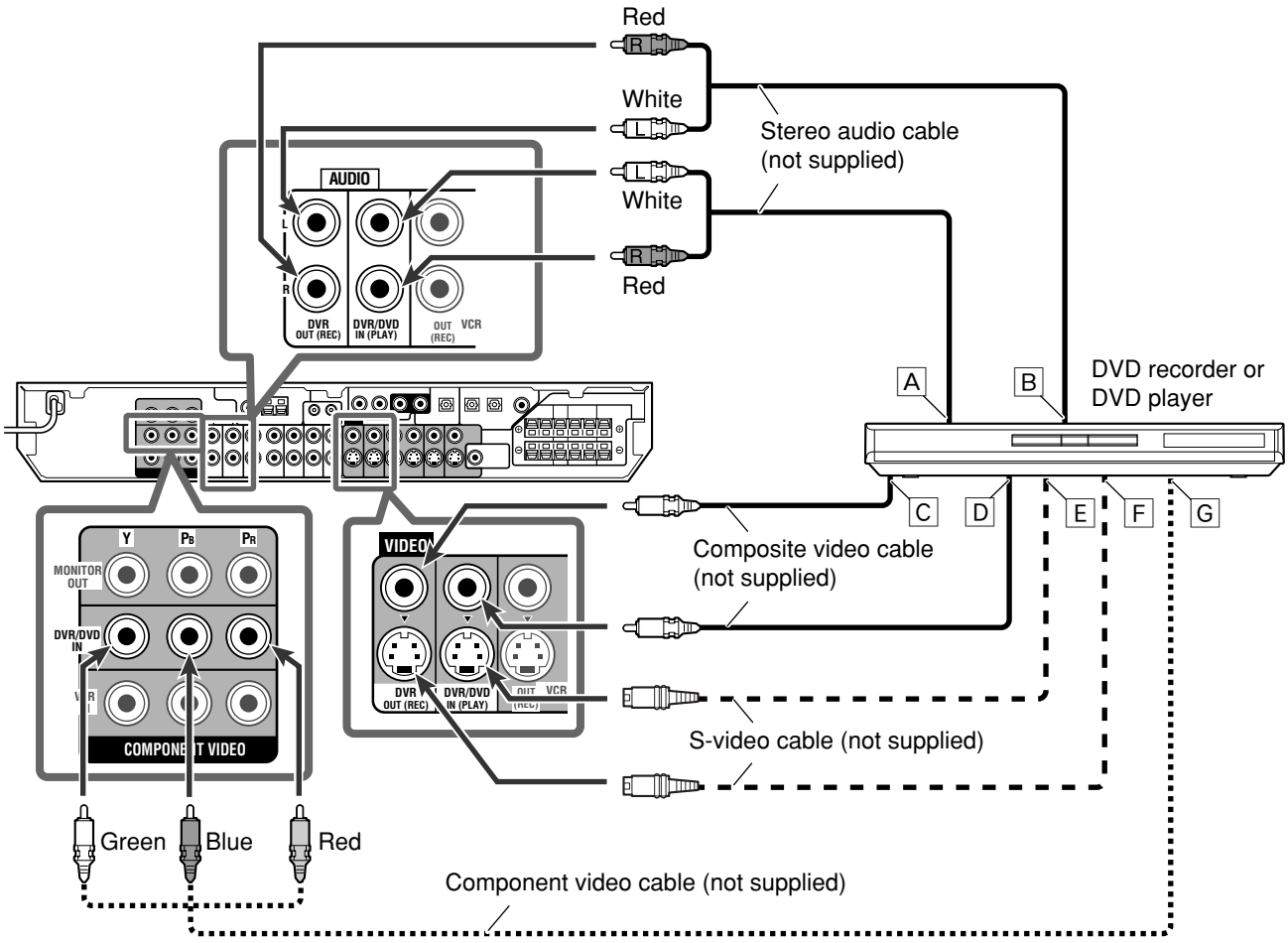
CAUTION:

If you connect a sound-enhancing device such as a graphic equalizer between the source components and this receiver, the sound output through this receiver may be distorted.

If your video components have AV COMPU LINK terminal

See also page 32 for detailed information about the connection and the AV COMPU LINK remote control system.

■ Connecting a DVD recorder or DVD player with its stereo output jacks:



NOTE

When connecting a DVD recorder or DVD player to the component video input jacks, make the component video input setting (DVD VIDEO) correctly for AV COMPU LINK remote control system. See page 21 for details.

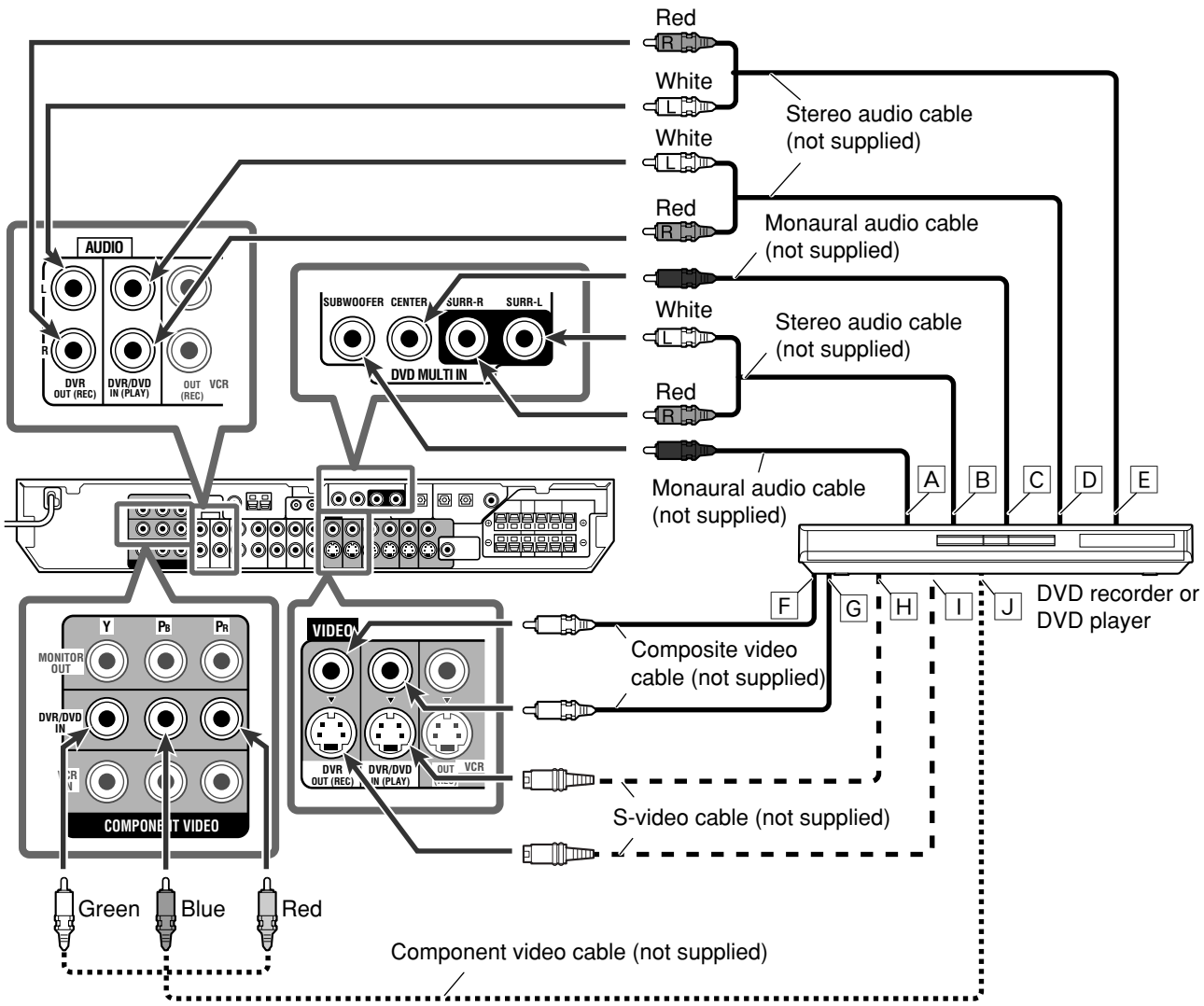
- A To left/right audio channel output
- B **Only for DVD recorder:** To left/right audio channel input
- C **Only for DVD recorder:** To composite video input
- D To composite video output
- E To S-video output
- F **Only for DVD recorder:** To S-video input
- G To component video output
  - Connect Y, P_B, and P_R correctly.

■ Connecting a DVD recorder or DVD player with its analog discrete output jacks (DVD MULTI IN):

This connection is the best connection method for enjoying DVD Audio sounds. When a DVD Audio disc is played back, the original high-quality sounds can be reproduced only using this connection.

Turn off all components before making connections.

- When you connect other components, refer also to their manuals.



NOTE

When connecting a DVD recorder or DVD player to the component video input jacks, make the component video input setting (DVD VIDEO) correctly for AV COMPU LINK remote control system. See page 21 for details.

- A To subwoofer output
- B To left/right surround channel audio output
- C To center channel audio output
- D To left/right front channel audio output
- E **Only for DVD recorder:** To left/right front channel audio input
- F **Only for DVD recorder:** To composite video input
- G To composite video output
- H To S-video output
- I **Only for DVD recorder:** To S-video input
- J To component video output
  - Connect Y, P_B, and P_R correctly.

About "DVD MULTI"

When you select "DVD MULTI" as the source (see page 12), you can enjoy analog discrete output sound (5.1-channel reproduction) from the connected component.

- You may need to select analog discrete output mode on the component.

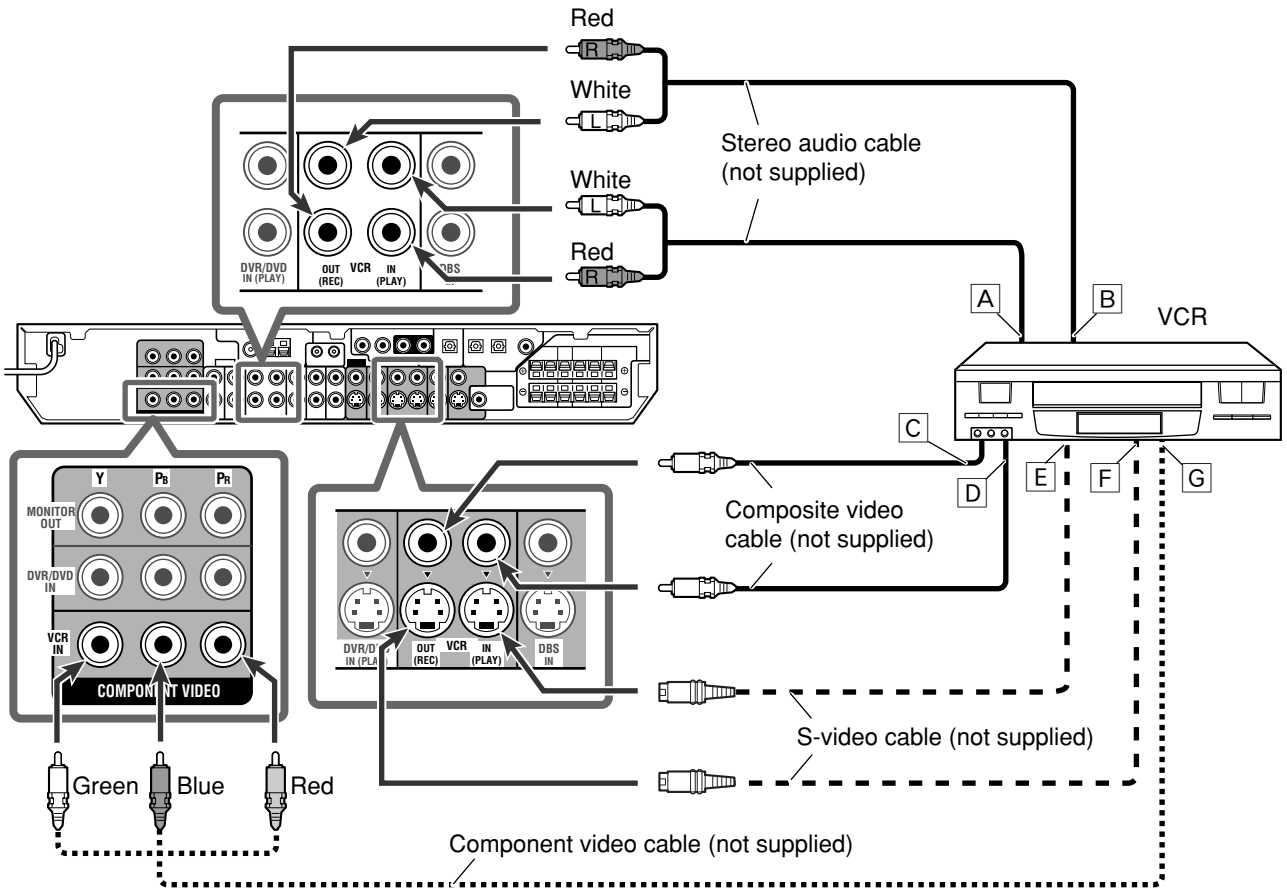
NOTES

- When using the headphones, you can listen to the front channel sounds (left and right) only. 3D HEADPHONE mode (see pages 28 and 29) is not available.
- When TV Direct is activated while "DVD MULTI" is selected as the source, the source changes to the last selected source—"DVR/DVD," "VCR," and "DBS" (see page 14).
- Surround/DSP modes (see pages 27 to 31) are not available for "DVD MULTI."

■ Connecting a VCR

Turn off all components before making connections.

- When you connect other components, refer also to their manuals.



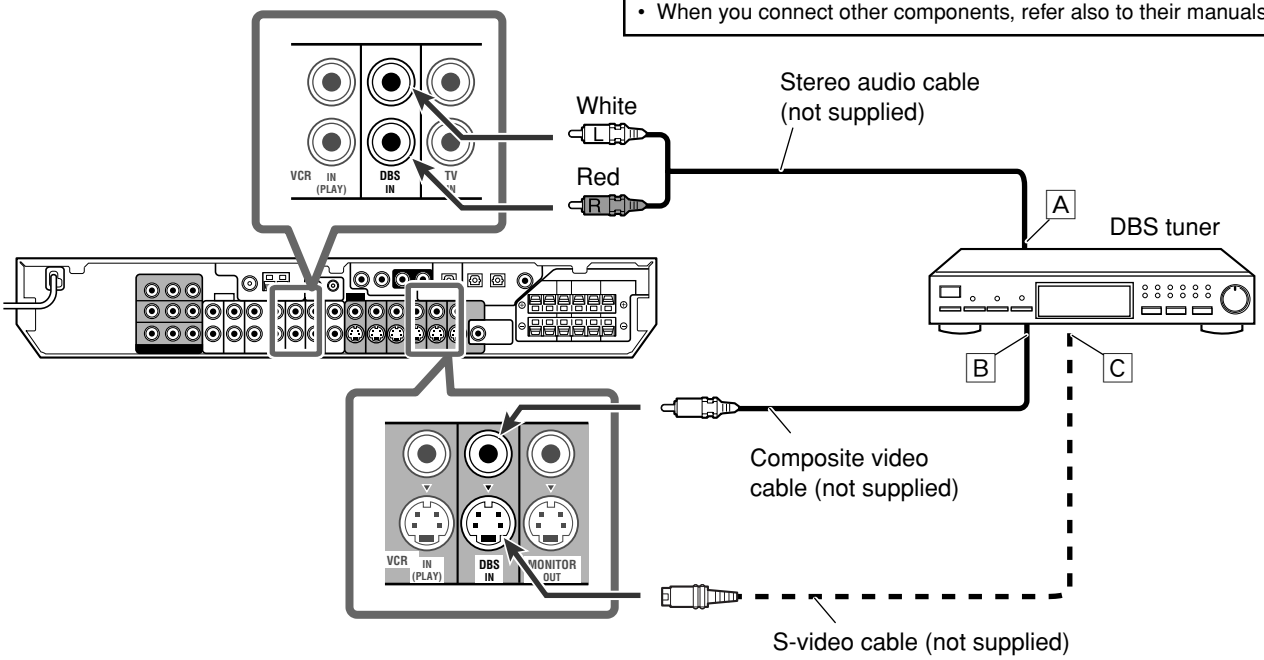
NOTE

When connecting a VCR to the component video input jacks, make the component video input setting (VCR VIDEO) correctly for AV COMPU LINK remote control system. See page 21 for details.

- A To left/right audio channel output
- B To left/right audio channel input
- C To composite video input
- D To composite video output
- E To S-video output
- F To S-video input
- G To component video output
  - Connect Y, P_B, and P_R correctly.

■ Connecting a DBS tuner

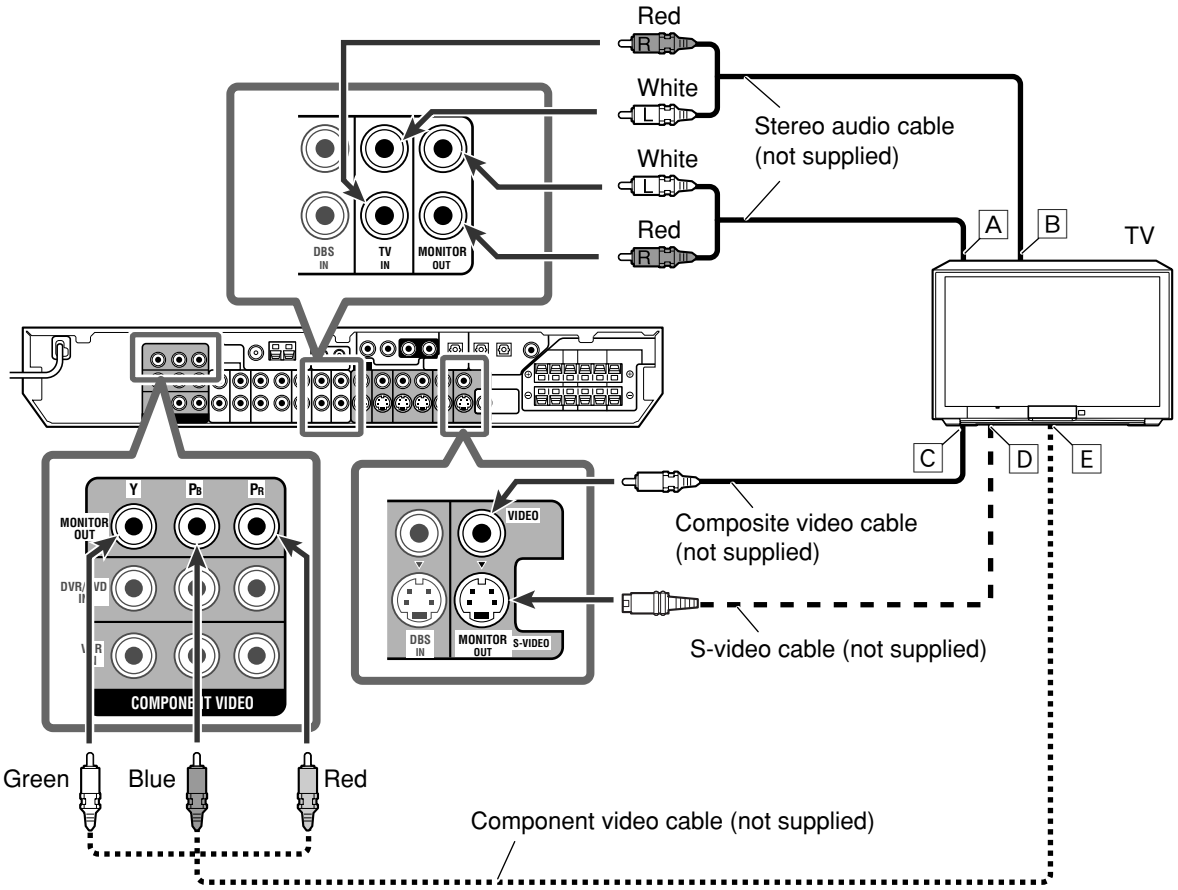
Turn off all components before making connections.
- When you connect other components, refer also to their manuals.



A To left/right audio channel output
B To composite video output
C To S-video output

■ Connecting a TV

Connect the TV to the appropriate MONITOR OUT jacks to view the playback pucture from any other connected video components.



IMPORTANT:

Audio signals come out through the MONITOR OUT (L/R) jacks ONLY when TV Direct is in use (see page 14).
Connect these jacks to the audio input jacks corresponding to the video connection; otherwise, no sound comes out of the TV speaker when TV Direct is in use.

A To left/right audio channel input
B To left/right audio channel output
C To composite video input
D To S-video input
E To component video input
- Connect Y, P_B, and P_R correctly.

Digital connection

This receiver is equipped with three DIGITAL IN terminals—one digital coaxial terminal and two digital optical terminals—and one DIGITAL OUT terminal.
To reproduce the digital sound, use the digital connection in addition to the analog connection methods described on pages 7 to 10.

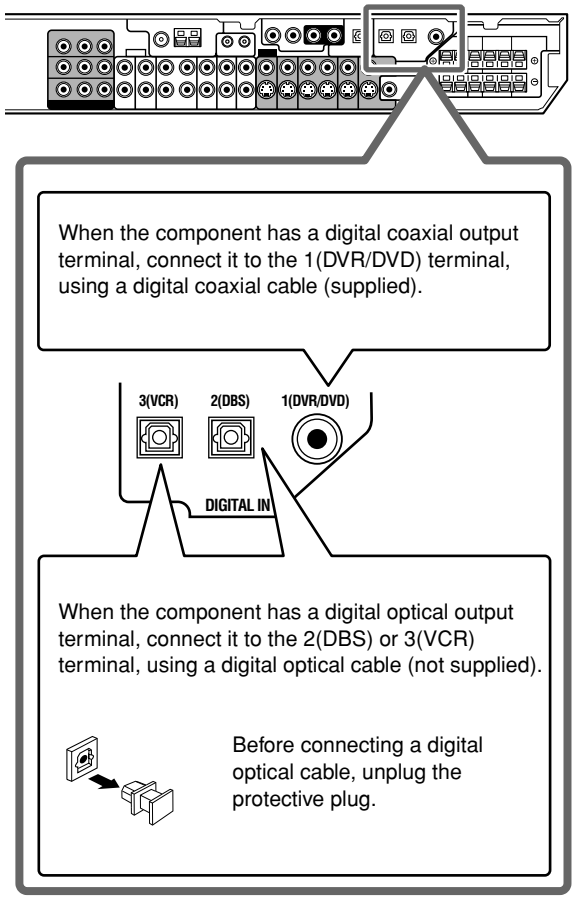
Digital coaxial cable (supplied: 1 cable)

Digital optical cable (not supplied)

Turn off all components before making connections.

- When you connect other components, refer also to their manuals.

■ Digital input terminals

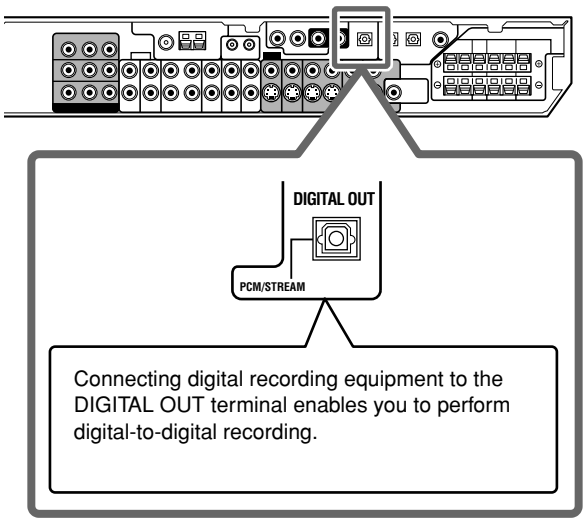

When the component has a digital coaxial output terminal, connect it to the 1(DVR/DVD) terminal, using a digital coaxial cable (supplied).
3(VCR)
2(DBS)
1(DVR/DVD)
DIGITAL IN
When the component has a digital optical output terminal, connect it to the 2(DBS) or 3(VCR) terminal, using a digital optical cable (not supplied).
Before connecting a digital optical cable, unplug the protective plug.

NOTES

- When shipped from the factory, the DIGITAL IN terminals have been set for use with the following components:
  – 1(DVR/DVD): For DVD recorder or DVD player
  – 2(DBS): For DBS tuner
  – 3(VCR): For VCR
  If you connect other components, change the digital input (DIGITAL IN) terminal setting correctly. See “Setting the digital input (DIGITAL IN) terminals—DIGITAL IN1/2/3” on page 21.
- Select the correct digital input mode. See “Selecting the analog or digital input mode” on page 12.
- When you want to operate the connected component (except DBS tuner) using the AV COMPU LINK remote control system (see pages 32 and 33), connect them also as described on pages 7 to 10.

■ Digital output terminal

You can connect any digital componens which have an optical digital input terminal.


DIGITAL OUT
PCM/STREAM
Connecting digital recording equipment to the DIGITAL OUT terminal enables you to perform digital-to-digital recording.

NOTE

The digital signal format transmitted through the DIGITAL OUT terminal is the same as that of the input signal. For example, when the DTS signals are input, the DTS signals are transmitted.

Connecting the power cord

When all the audio/video connections have been made, connect the AC power plug to the wall outlet. Make sure that the plugs are inserted firmly. The standby lamp lights in red.

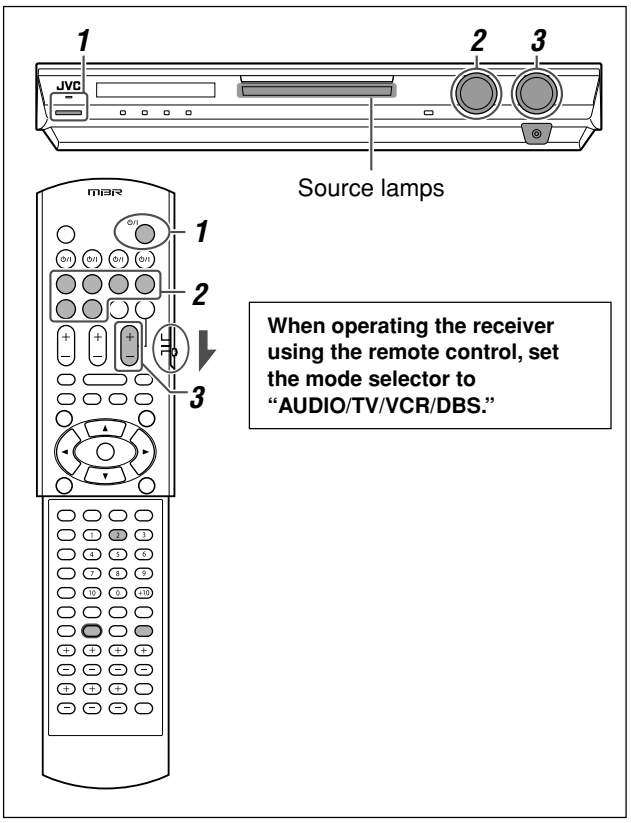
CAUTIONS:

- Do not touch the power cord with wet hands.
- Do not alter, twist or pull the power cord, or put anything heavy on it, which may cause fire, electric shock, or other accidents.
- If the cord is damaged, consult a dealer and have the power cord replaced with a new one.

NOTES

- Keep the power cord away from the connecting cables and the antenna. The power cord may cause noise or screen interference.
- The preset settings such as preset channels and sound adjustment may be erased in a few days in the following cases:
  – When you unplug the power cord.
  – When a power failure occurs.

Basic operations

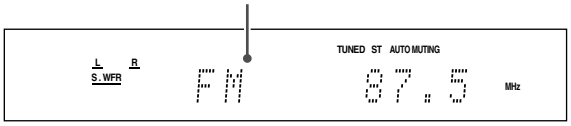


1 Turn on the power

Press ⏻/I STANDBY/ON (or ⏻/I AUDIO on the remote control).

The standby lamp goes off and the source lamp of the current source lights in red.

Current source name appears.



To turn off the power (into standby)

Press ⏻/I STANDBY/ON (or ⏻/I AUDIO on the remote control) again.
The standby lamp lights in red.

NOTE

A small amount of power is consumed in standby mode. To turn the power off completely, unplug the AC power cord.

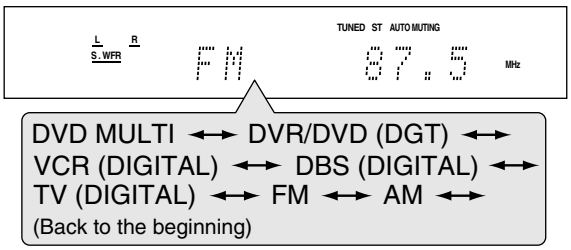
2 Select the source to play

On the front panel:

Turn SOURCE SELECTOR until the source name you want appears on the display.

The source lamp corresponding to the selected source lights in red.

- As you turn SOURCE SELECTOR, the source changes as follows:



DVD MULTI:	Select the DVD player using the analog discrete output mode (5.1-channel reproduction).
DVR/DVD (DGT)*:	Select the DVD recorder or DVD player.
VCR (DIGITAL)*:	Select the VCR.
DBS (DIGITAL)*:	Select the DBS tuner.
TV (DIGITAL)*:	Select the TV.
FM:	Select an FM broadcast.
AM:	Select an AM broadcast.

From the remote control:

Press one of the source selecting buttons.

- For the tuner, press FM/AM. Each time you press FM/AM, the band alternates between FM and AM.

* Selecting the analog or digital input mode

For a component you have connected using both the analog connection and the digital connection methods (see pages 7 to 11), you need to select the correct input mode.

- You can select the digital input only for sources which you have selected digital input terminals for. (See "Setting the digital input (DIGITAL IN) terminals—DIGITAL IN1/2/3" on page 21.)

From the remote control ONLY:

Press ANALOG/DIGITAL INPUT to select the analog or digital input mode.

- Each time you press the button, the input mode alternates between the analog input ("ANALOG") and the digital input ("DGTL AUTO"). This setting is memorized for each source.

DGTL AUTO:	Select for the digital input mode. The receiver automatically detects the incoming signal format, then the digital signal format indicator (LPCM, DOLBY D, DTS, or DTS 96/24) for the detected signal lights up.
ANALOG:	Select for the analog input mode.

Initial setting: ANALOG

NOTE

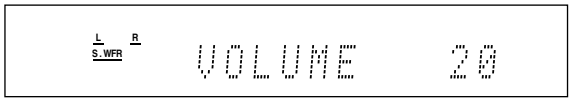
You cannot select the digital input mode when selecting "DVD MULTI," "FM," or "AM" as the source.

3 Adjust the volume

To increase the volume, turn MASTER VOLUME control clockwise (or press VOLUME + on the remote control).

To decrease the volume, turn MASTER VOLUME control counterclockwise (or press VOLUME – on the remote control).

- When you adjust the volume, the volume level indication appears on the display for a while.



CAUTION:

Always set the volume to the minimum before starting any sources. If the volume is set at its high level, the sudden blast of sound energy can permanently damage your hearing and/or ruin your speakers.

NOTE

The volume level can be adjusted within the range of "0" (minimum) to "50" (maximum).

Listening with headphones

You can enjoy not only stereo software but also multi-channel software through the headphones. (Sounds are down-mixed to the front channels while playing multi-channel software.)

Connect a pair of headphones to the PHONES jack on the front panel to activate the HEADPHONE mode.

The HP (headphone) indicator lights up on the display.

- You can also enjoy the Surround/DSP mode through the headphones—3D HEADPHONE mode. For details, see pages 28 and 29.
- Disconnecting a pair of headphones from the PHONES jack cancels the HEADPHONE (or 3D HEADPHONE) mode and activates the speakers.

CAUTION:

Be sure to turn down the volume:

- Before connecting or putting on headphones, as high volume can damage both the headphones and your hearing.
- Before removing headphones, as high volume may output from the speakers.

Selecting the digital decode mode

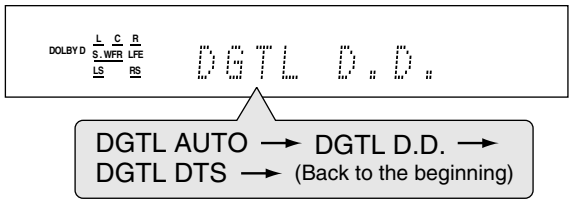
If the following symptoms occur while playing Dolby Digital or DTS software with "DGTL AUTO" selected (see page 12), follow the procedure below:

- Sound does not come out at the beginning of playback.
- Noise comes out while searching for or skipping chapters or tracks.

From the remote control ONLY:

Press SOUND, then press DECODE to select "DGTL D.D." or "DGTL DTS."

- Each time you press DECODE, the digital decode mode changes as follows:



- To play back software encoded with Dolby Digital, select "DGTL D.D."
- To play back software encoded with DTS, select "DGTL DTS."

NOTES

- When you turn off the power or select another source, "DGTL D.D." or "DGTL DTS" is canceled and the digital decode mode is automatically reset to "DGTL AUTO."
- After pressing SOUND, the numeric buttons work for sound adjustments. To use the numeric buttons to operate your target source, press the corresponding source selecting button before operation; otherwise, the remote control may not work as you intend.

The following digital signal format indicators on the display indicate what type of signal comes into the receiver.

LPCM: Lights up when Linear PCM signal comes in.

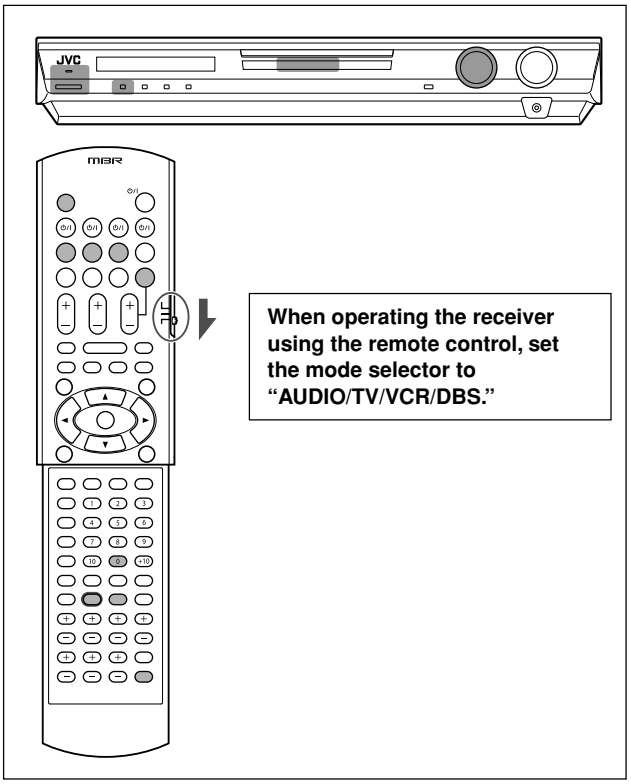
DOLBY D:
- Lights up when Dolby Digital signal comes in.
- Flashes when "DGTL D.D." is selected for any software other than Dolby Digital.

DTS:
- Lights up when conventional DTS signal comes in.
- Flashes when "DGTL DTS" is selected for any software other than DTS.

DTS 96/24: Lights up when DTS 96/24 signal comes in.

NOTE

When "DGTL AUTO" cannot recognize the incoming signal, no digital signal format indicator lights up on the display.



Adjusting the subwoofer audio position

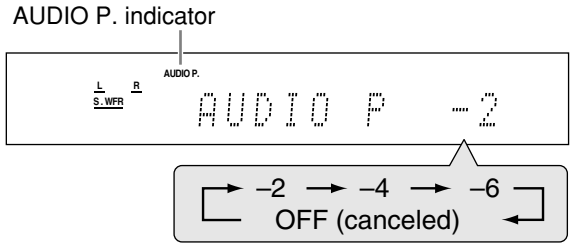
If the subwoofer sound is much reinforced for stereo sound compared to the sound reproduced with multi-channel, set the subwoofer audio position. The subwoofer output level is automatically decreased by the selected value when you are listening in stereo.
The AUDIO P. indicator lights up when this function is activated.

- Once you have made an adjustment, it is memorized for each source.

From the remote control ONLY:

Press SOUND, then press A.POSITION repeatedly.

- Each time you press A.POSITION, the subwoofer audio position level changes as follows:



The smaller the number becomes, the more the level decreases automatically when listening in stereo.

- If no adjustment is required, select "OFF" (initial setting).

NOTES

- The minimum subwoofer output level is –10 dB.
  Ex.: When setting the subwoofer output level to "–8 (dB)" and the subwoofer audio position to "–4 (dB)," the subwoofer output level when listening in stereo will be –10 dB.
  To adjust the subwoofer output level, see page 23.
- This function is not available when the Surround/DSP mode is activated or "DVD MULTI" is selected.
- After pressing SOUND, the numeric buttons work for sound adjustments. To use the numeric buttons to operate your target source, press the corresponding source selecting button before operation; otherwise, the remote control may not work as you intend.

Activating TV Direct

TV Direct enables you to use this receiver as an AV selector **while the receiver is turned off.**
When TV Direct is activated, the pictures and sounds go from the video components such as DVD player to the TV through this receiver. Thus, you can use the video components and the TV as if they were connected directly.

- This function takes effect for the following sources—DVR/DVD, VCR, and DBS.

To activate (or deactivate) TV Direct, follow the procedure below:

1 Press TV DIRECT.

All the indications disappear, then the source lamp of the current source lights in green.

2 Turn on the video component and TV.

3 Select the target video component.

On the front panel:

Turn SOURCE SELECTOR until one of the source lamps—DVR/DVD, VCR, or DBS—lights in green.

From the remote control:

Press one of the source selecting buttons—DVR/DVD, VCR, or DBS.

The source lamp corresponding to the selected source lights in green.

To cancel TV Direct and turn off the receiver, press ⏻/I STANDBY/ON on the front panel (or ⏻/I AUDIO on the remote control).
The receiver is turned off and the standby lamp lights up.

To cancel TV Direct and turn on the receiver, press TV DIRECT again.
The receiver is turned on and the source lamp currently selected lights in red.

NOTES

- When TV Direct is activated, you cannot enjoy any of the sound effects the receiver produces, and cannot use the speakers connected to the receiver.
- When TV Direct is activated while "DVD MULTI," "FM," or "AM" is selected as the source, the source changes to the last selected source—"DVR/DVD," "VCR," or "DBS."

Turning off the sounds temporarily

From the remote control ONLY:

Press MUTING to turn off the sound through all connected speakers and headphones.

"MUTING" appears on the display and the volume turns off.

To restore the sound, press MUTING again.

- Pressing VOLUME +/– (or turning MASTER VOLUME control on the front panel) also restores the sound.

Changing the display brightness

You can dim the display—Dimmer.

From the remote control ONLY:

Press DIMMER repeatedly.

- Each time you press the button, the display brightness changes as follows:

DIMMER 1:	Dims the display slightly. Dims the blue illumination slightly.
DIMMER 2:	Dims the display more than DIMMER 1. Dims the blue illumination slightly (same as DIMMER 1).
DIMMER 3:	Turns off the display and blue illumination. (Temporarily canceled when you operate the receiver.*)
DIMMER OFF:	Cancels the Dimmer (normal display).

* Except when activating or deactivating TV Direct.

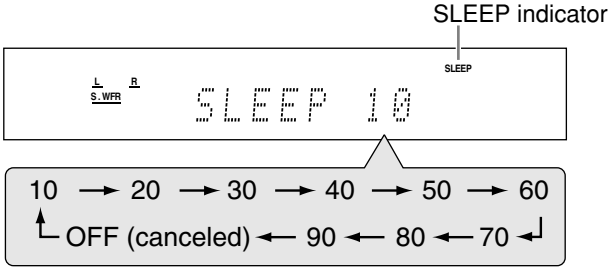
Turning off the power with the Sleep Timer

You can fall asleep while listening to music—Sleep Timer.

From the remote control ONLY:

Press SLEEP repeatedly.

- Each time you press the button, the shut-off time changes in 10 minute intervals. The SLEEP indicator lights up on the display.



When the shut-off time comes:
The receiver turns off automatically.

To check or change the remaining time until the shut-off time:
Press SLEEP once.
The remaining time (in minutes) until the shut-off time appears.

- To change the shut-off time, press SLEEP repeatedly.

To cancel the Sleep Timer:
Press SLEEP repeatedly so that "SLEEP OFF" appears on the display. (The SLEEP indicator goes off.)

- The Sleep Timer is also canceled when:
  – You turn off the receiver, or
  – You activate TV Direct.

Basic adjustment of auto memory

This receiver memorizes sound settings for each source:

- when you turn off the power, and
- when you change the source.

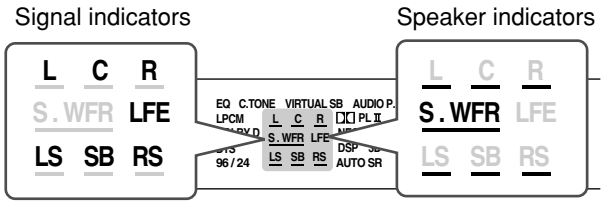
When you change the source, the memorized settings for the newly selected source are automatically recalled.
The following can be stored for each source:

- Analog/digital input mode (see page 12)
- Subwoofer audio position (see page 14)
- Speaker output level (see page 23)
- Subwoofer phase (see page 24)
- Digital equalization pattern (see page 24)
- Bass boost (see page 24)
- Input attenuator mode (see page 24)
- Surround/DSP mode selection (see pages 30 and 31)

NOTE

If the source is FM or AM, you can assign a different setting for each band.

Signal and speaker indicators on the display



The signal indicators light up as follows:

L:
- **When digital input is selected:** Lights up when the left channel signal comes in.
- **When analog input is selected:** Always lights up.

R:
- **When digital input is selected:** Lights up when the right channel signal comes in.
- **When analog input is selected:** Always lights up.

C: Lights up when the center channel signal comes in.
LS*: Lights up when the left surround channel signal comes in.
RS*: Lights up when the right surround channel signal comes in.
SB: Lights up when the surround back channel signal comes in.
LFE: Lights up when the LFE channel signal comes in.

* When monaural surround signal comes in, only "S" lights up.

NOTE

When "DVD MULTI" is selected as the source, all the signal indicators except "SB" light up.

The speaker indicators light up as follows:

- The subwoofer indicator (S.WFR) lights up when "SUBWOOFER" is set to "SUBWFR :YES." For details, see page 18.
- The other speaker indicators light up only when the corresponding speaker is set to "SML (small)" or "LRG (large)," and also when required for the current playback.

Basic settings

To obtain the best possible sound effect from Surround/DSP modes (see pages 27 to 31), you need to set up the speaker and subwoofer information after all the connections are completed. From pages 16 to 21, how to set speakers and other basic items of the receiver are explained.

Setting the speaker information automatically—Smart Surround Setup

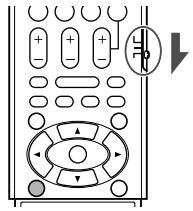
The distance from your listening point to the speakers is one of the important elements to obtain the best possible sound effect for the Surround/DSP modes.
By using Smart Surround Setup, the following are automatically calculated by one simple action—clapping hands.

- Speaker distance (compared to that of the closest speaker)
- Speaker output level (except the subwoofer)

NOTES

- To set the speaker information effectively using Smart Surround Setup, unplug the power cords of all the components connected to this receiver and the subwoofer which may cause noise.
- Before starting Smart Surround Setup, set the speaker information correctly (SML, LRG, or NO) according to your speakers except the subwoofer (see page 18).
- When the setting is made by Smart Surround Setup, the speaker distance and output level you have set before will be inactive.
- If you have turned off the display, cancel the Dimmer (see page 15); otherwise, you cannot see the information on the display during Smart Surround Setup.
- Smart Surround Setup will not be done correctly if you or other object blocks the sound.
- When you change your speakers, do the following procedure again.

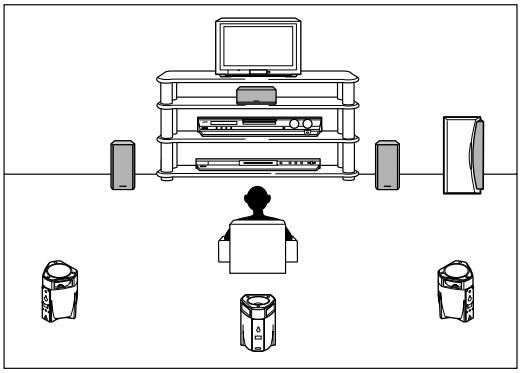
From the remote control ONLY:



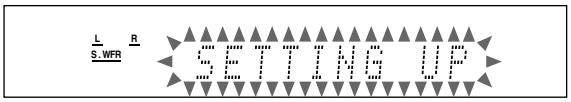
When operating the receiver using the remote control, set the mode selector to "AUDIO/TV/VCR/DBS."

1 Take your position where you listen to the sound.

- Make sure speaker cables are connected firmly.

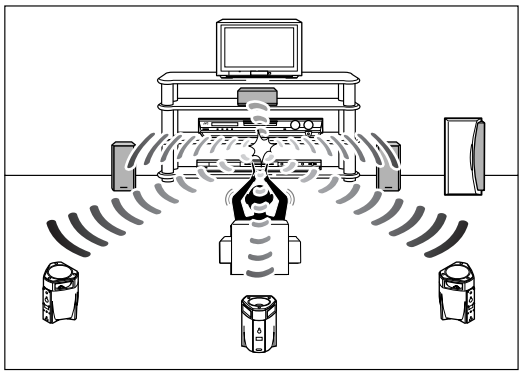


2 Press and hold SMART SURROUND SETUP until "SETTING UP" flashes on the display.



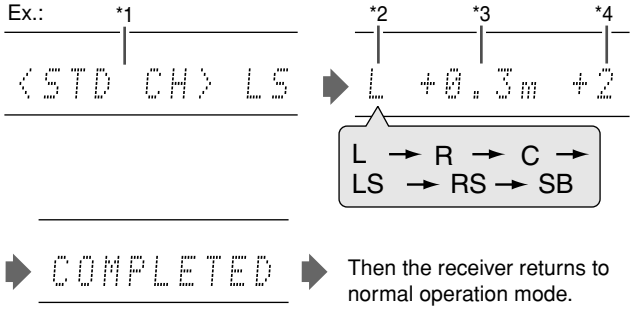
3 Confirm that "SETTING UP" stops flashing, then clap your hands over your head once while "SETTING UP" still remains on the display.

The receiver starts detecting the level of the sound coming through each speakers (except the subwoofer).



When your clapping sound is detected successfully,

"SUCCESSFUL" appears on the display, then the values set are shown as follows:



Then the receiver returns to normal operation mode.

*1 Standard channel (the closest speaker). This speaker position now works as the reference position ("0m/ft") and other speakers' distance is shown by the difference with this reference speaker position.
*2 **L:** Left front speaker
R: Right front speaker
C: Center speaker
LS: Left surround speaker
RS: Right surround speaker
SB: Surround back speaker
*3 Difference of each speaker position in distance (in meters or feet).
*4 Each speaker's output level (–6 to +6).

When your clapping sound is not detected correctly,

"SETTING UP" appears again after one of the following messages. In this case, repeat step ***3***.

SILENT:
- The receiver detects sound from only the left and right front speakers.
- The receiver detects no sound from the front speakers and detects sound from at least one of the other speakers.

SILENT-ALL: The receiver cannot detect any sound from any speakers for about 15 seconds.

FAILED: The receiver cannot detect sound from the left or right front speaker.

In the following cases, set the speakers manually.

- **When the receiver detects the sound but as "SILENT" twice in succession.**

  The setting is made. (The distance of the speakers from which sound has not been detected is set to "+9.0m (+30ft).")
  The receiver exits from Smart Surround Setup.

- **When the receiver fails to detect the sound three times.**

  "MANUAL" appears on the display. The receiver exits from Smart Surround Setup.

To cancel Smart Surround Setup, press SMART SURROUND SETUP while "SETTING UP" flashes on the display.

- No other operations can be accepted after "SETTING UP" stops flashing. Complete the Smart Surround Setup.

To check the setting made by Smart Surround Setup, press SMART SURROUND SETUP while the receiver is in normal operation mode.
The setting values appear one after another (see page 16).

- If you have changed speaker distance and/or output level manually after using Smart Surround Setup, "MANUAL" appears.
- If you have not used Smart Surround Setup, "NO S.S.S." appears.

NOTES

- The speaker distance and output level manually set will be applied instead of those set by using Smart Surround Setup in the following cases:
  – When you change one of the speaker distance (see page 19).
  – When you change one of the speaker output level (see page 23).
  – When you change one of the speaker size either from "NO" to "SML" or "LRG," or from "SML" or "LRG" to "NO" (see page 18).
- When you want to adjust the speaker distance and output level manually, see pages 19 and 23.
- Do not clap your hands so hard that it may hurt your hands.

Basic setting items

You can adjust the following items. See pages in parentheses for details.

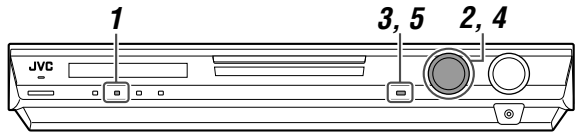
- You cannot select the items which is not available with the current setting.

Items	To do
SUBWOOFER	Register your subwoofer. (18)
FRONT SPK	Register your front speaker size. (18)
CENTER SPK	Register your center speaker size. (18)
SURRND SPK	Register your surround speaker size. (18)
S BACK SPK	Register your surround back speaker size. (18)
DIST UNIT	Select the measuring unit for the speaker distance. (19)
FRNT L DIST*	Register the distance from the left front speaker to your listening point. (19)
FRNT R DIST*	Register the distance from the right front speaker to your listening point. (19)
CENTER DIST*	Register the distance from the center speaker to your listening point. (19)
SURR L DIST*	Register the distance from the left surround speaker to your listening point. (19)
SURR R DIST*	Register the distance from the right surround speaker to your listening point. (19)
S BACK DIST*	Register the distance from the surround back speaker to your listening point. (19)
SUBWFR OUT	Select sounds emitted from the subwoofer. (19)
EX/ES	Select the EX/ES reproduction mode. (20)
DUAL MONO	Select the Dual Mono sound channel. (20)
CROSS OVER	Select the cutoff frequency to the subwoofer. (19)
LFE ATT	Attenuate the bass (LFE) sounds. (19)
MIDNIGHT M.	Reproduce a powerful sound at night. (20)
DIGITAL IN1	Select the component connected to the digital coaxial terminal—1(DVR/DVD). (21)
DIGITAL IN2	Select the component connected to the digital optical terminal—2(DBS). (21)
DIGITAL IN3	Select the component connected to the digital optical terminal—3(VCR). (21)
AUTO SURRND	Select Auto Surround mode. (21)
DVD VIDEO	Select the type of video terminal used for the DVD recorder or DVD player. (21)
VCR VIDEO	Select the type of video terminal used for the VCR. (21)

* If you have used Smart Surround Setup on page 16, these settings are not required.

CONTINUED ON THE NEXT PAGE

Operating procedure



On the front panel ONLY:

Before you start, remember...

There is a time limit in doing the following steps. If the setting is canceled before you finish, start from step ***1*** again.

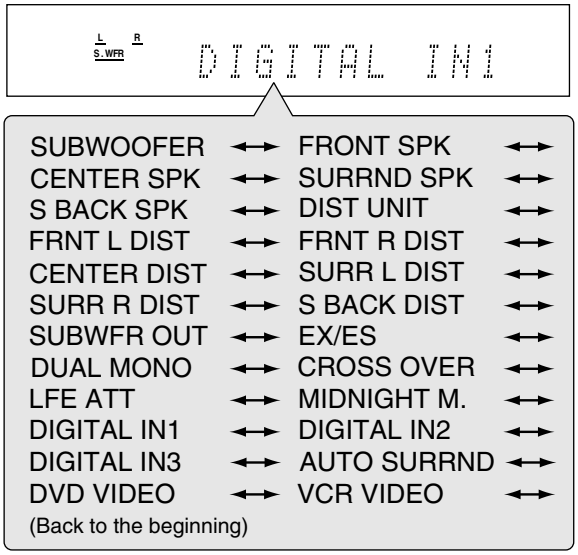
Ex.: When setting DIGITAL IN 1 terminal.

1 Press SETTING.

MULTI JOG now works for the setting operation.

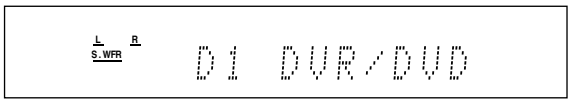
2 Turn MULTI JOG until the item you want to set appears on the display.

- As you turn MULTI JOG, the setting items change as follows:

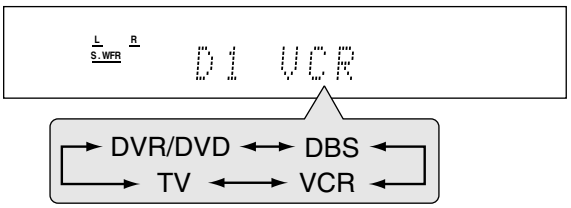

L
S.WFR
R
DIGITAL IN1
SUBWOOFER ↔ FRONT SPK ↔
CENTER SPK ↔ SURRND SPK ↔
S BACK SPK ↔ DIST UNIT ↔
FRNT L DIST ↔ FRNT R DIST ↔
CENTER DIST ↔ SURR L DIST ↔
SURR R DIST ↔ S BACK DIST ↔
SUBWFR OUT ↔ EX/ES ↔
DUAL MONO ↔ CROSS OVER ↔
LFE ATT ↔ MIDNIGHT M. ↔
DIGITAL IN1 ↔ DIGITAL IN2 ↔
DIGITAL IN3 ↔ AUTO SURRND ↔
DVD VIDEO ↔ VCR VIDEO ↔
(Back to the beginning)

3 Press SET.

The current setting of the selected item appears.



4 Turn MULTI JOG to select the appropriate setting.



Your setting is stored.

5 Press SET.

6 Repeat steps *2* to *5* to set other items if necessary.

Setting the speakers

Setting subwoofer information—SUBWOOFER

Each time the receiver turns on, the receiver detects the subwoofer connection and automatically changes the setting of the subwoofer.
When you want to change the setting manually, select either one below.

SUBWFR :YES	Select when you have connected a subwoofer. The subwoofer indicator (S.WFR) lights up on the display. You can adjust the subwoofer output level (see page 23).
SUBWFR : NO	Select when you have disconnected a subwoofer. Selecting this changes the front speaker size to "LRG" (see below).

NOTE

You need to change the setting each time you turn on the receiver if you want to change the subwoofer information set automatically.

Setting the speaker size—FRONT SPK (front speakers), CENTER SPK (center speaker), SURRND SPK (surround speakers), S BACK SPK (surround back speaker)

Register the sizes of all the connected speakers.

LRG (large)	Select when the cone speaker size is larger than 12 cm.
SML (small)	Select when the cone speaker size is smaller than 12 cm.
NO	Select when you have disconnected a speaker. (Not selectable for the front speakers.)

Initial setting: SML for all speakers*

* When "SUBWOOFER" is set to "SUBWFR : NO," the front speaker size is fixed to "LRG" (and you cannot select "SML").

NOTES

- If you have selected "SML (small)" for the front speaker size, you cannot select "LRG (large)" for other speakers.
- When "SURRND SPK" is set to "SML (small)," you cannot select "LRG (large)" for the surround back speaker.
- When "SURRND SPK" is set to "NO," the surround back speaker is fixed to "NO."
- If you change one of the speaker size either from "NO" to "SML" or "LRG," or from "SML" or "LRG" to "NO," the distance and output level manually set will be applied instead of those set by using Smart Surround Setup.

Setting the speaker distance

The distance from your listening point to the speakers is one of the important elements to obtain the best possible sound effect from the Surround/DSP modes.
By referring to the speaker distance, the receiver automatically sets the delay time of the sound through each speaker so that sounds through all the speakers can reach you at the same time.

■ **Measuring unit—DIST UNIT**

Select which measuring unit you use.

UNIT :meter	Select to set the distance in meters.
UNIT : feet	Select to set the distance in feet.

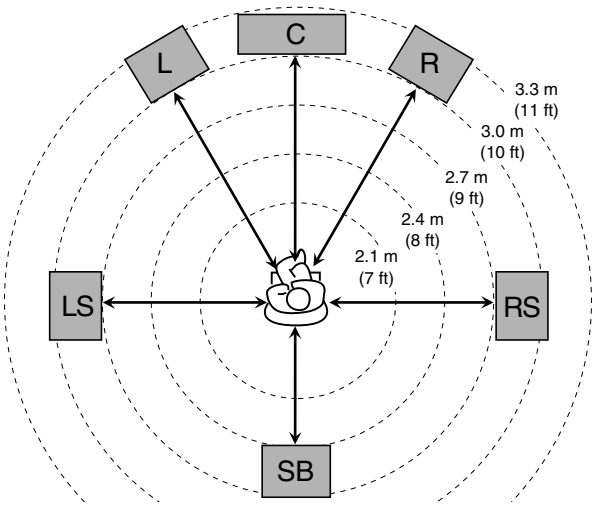
Initial setting: UNIT :meter

■ **Speaker distance—**
FRNT L DIST (for the left front speaker),
FRNT R DIST (for the right front speaker),
CENTER DIST (for the center speaker),
SURR L DIST (for the left surround speaker),
SURR R DIST (for the right surround speaker),
S BACK DIST (for the surround back speaker)

Adjustable range: 0.3 m to 9.0 m in 0.3 m intervals
(1 ft to 30 ft in 1 ft intervals)

Initial setting: 3.0 m (10 ft) for all speakers

- If you have used Smart Surround Setup on page 16, this setting is not required.



In this case, set the distance as follows:

Left front speaker (L):	“FL D : 3.0m (10ft)”
Right front speaker (R):	“FR D : 3.0m (10ft)”
Center speaker (C):	“C D : 3.0m (10ft)”
Left surround speaker (LS):	“LS D : 2.7m (9ft)”
Right surround speaker (RS):	“RS D : 2.7m (9ft)”
Surround back speaker (SB):	“SB D : 2.4m (8ft)”

NOTES

- You cannot set the speaker distance for the speakers you have set to “NO.”
- If you change one of these settings manually, the distance and output level manually set will be applied instead of those set by using Smart Surround Setup.

Setting bass sound

Setting subwoofer output—SUBWFR OUT

You can select the type of the signal which can be transmitted through the subwoofer. In other words, you can determine whether or not the bass elements of the front speaker channels are transmitted through the subwoofer regardless of the front speaker size setting (either “SML” or “LRG”).

SW: LFE	Select to emit only the LFE signals (while playing Dolby Digital and DTS software) or the bass elements of the “SML (small)” front speakers (while playing any source other than above).
SW:LFE+MAIN	Select to always emit the bass elements of the front speaker channels (MAIN). While playing Dolby Digital and DTS software, the bass elements and the LFE signals are both emitted.

Initial setting: SW: LFE

NOTE

When “SUBWOOFER” is set to “SUBWFR : NO” (see page 18), this function is not available.

Setting the crossover frequency—CROSS OVER

Small speakers cannot reproduce the bass sounds efficiently. If you use a small speaker in any position, this receiver automatically reallocates the bass sound elements assigned to the small speaker to the large speakers.
To use this function properly, set this crossover frequency level according to the size of the small speaker connected.

- If you have selected “LRG (large)” for all speakers (see page 18), this function will not take effect (“CROSS: OFF” appears).

CROSS: 80Hz	Select when the cone speaker unit built in the speaker is about 12 cm.
CROSS:100Hz	Select when the cone speaker unit built in the speaker is about 10 cm.
CROSS:120Hz	Select when the cone speaker unit built in the speaker is about 8 cm.
CROSS:150Hz	Select when the cone speaker unit built in the speaker is about 6 cm.
CROSS:200Hz	Select when the cone speaker unit built in the speaker is less than 5 cm.

Initial setting: CROSS:150Hz

NOTE

Crossover frequency is not valid for the HEADPHONE and 3D HEADPHONE modes.

Setting the low frequency effect attenuator—LFE ATT

If the bass sound is distorted while playing back software encoded with **Dolby Digital** or **DTS**, set the LFE level to eliminate distortion.

- This function takes effect only when the LFE signals come in.

LFE : 0dB	Normally select this.
LFE :–10dB	Select when the bass sound is distorted.

Initial setting: LFE : 0dB

Activating the EX/ES setting—EX/ES

Depending on this setting, available Surround modes for digital multi-channel software vary—EX/ES (6.1-channel) reproduction or 5.1-channel reproduction. Select an appropriate setting for your enjoyment.

- For details about relation between EX/ES setting and available Surround mode, see page 30.
- To activate the Surround mode, see page 31.

EX/ES :AUTO	According to the incoming signal, an appropriate Surround mode is applied. • For Dolby Digital EX and DTS-ES software, EX/ES (6.1-channel) reproduction is applied*. • For other multi-channel (5.1-channel or less) encoded software, 5.1-channel reproduction is applied.
EX/ES : ON	Select to apply EX/ES (6.1-channel) reproduction to both 5.1-channel and 6.1-channel encoded software.
EX/ES : OFF	Select to cancel the EX/ES (6.1-channel) reproduction.

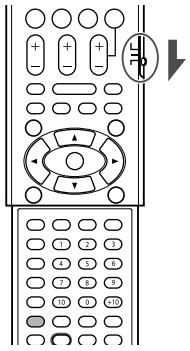
Initial setting: EX/ES :AUTO

* For some Dolby Digital EX software, Dolby Digital 5.1-channel reproduction ("DOLBY D") may be applied even though you have selected 6.1-channel reproduction to apply.

From the remote control:

Set the mode selector to "AUDIO/TV/VCR/DBS."

Press EX/ES repeatedly to select either one of the above.



NOTES

- When "SURRND SPK" is set to "NO" (see page 18), this function is not available.
- When "S BACK SPK" is set to "NO" (see page 18), the Virtual Surround Back (see page 30) is applied for EX/ES (6.1-channel) reproduction.

Selecting the main or sub channel —DUAL MONO

You can select the playback sound (channel) you want while playing digital software recorded (or broadcasted) in Dual Mono mode (see page 28), which includes two monaural channels separately.

D MONO:MAIN	Select to play back the main channel (Ch 1).* Signal indicator "L" lights up while playing back this channel.
D MONO: SUB	Select to play back the sub-channel (Ch 2).* Signal indicator "R" lights up while playing back this channel.
D MONO: ALL	Select to play back both the main and sub-channels (Ch 1/Ch 2).* Signal indicators "L" and "R" light up while playing back these channels.

Initial setting: D MONO:MAIN

* Dual Mono signals can be heard from the following speakers—L (left front speaker), R (right front speaker), and C (center speaker), with respect to the current Surround setting:

Dual Mono setting	Without Surround		With Surround Activated				
			Center speaker setting				
			SML/LRG			NO	
	L	R	L	C	R	L	R
MAIN	Ch 1	Ch 1	—	Ch 1	—	Ch 1	Ch1
SUB	Ch 2	Ch 2	—	Ch 2	—	Ch 2	Ch 2
ALL	Ch 1	Ch 2	—	Ch 1+Ch 2	—	Ch 1+Ch 2	Ch 1+Ch 2

NOTE

The Dual Mono format is not identical with bilingual broadcasting for TV programs. So this setting does not take effect while watching such bilingual programs.

Using the Midnight mode —MIDNIGHT M.

You can enjoy a powerful sound at night using the Midnight mode.

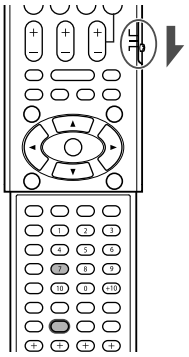
NIGHT :OFF	Select when you want to enjoy surround with its full dynamic range. (No effect applied.)
NIGHT : 1	Select when you want to reduce the dynamic range a little.
NIGHT : 2	Select when you want to apply the compression effect fully (useful at night).

Initial setting: NIGHT :OFF

From the remote control:

Set the mode selector to "AUDIO/TV/VCR/DBS."

Press SOUND, then press MIDNIGHT repeatedly to select either one of the above.



NOTE

After pressing SOUND, the numeric buttons work for sound adjustments. To use the numeric buttons to operate your target source, press the corresponding source selecting button before operation; otherwise, the remote control may not work as you intend.

Setting the digital input (DIGITAL IN) terminals—DIGITAL IN1/2/3

When you use the digital input terminals, register what components are connected to which terminals—DIGITAL IN1/2/3 (see page 11) so that the correct source name will appear when you select the digital source.
Select one of the following components for each terminal:

DVR/DVD	For the DVD player (or DVD recorder).
DBS	For the DBS tuner.
VCR	For the VCR.
TV	For the TV.

Initial setting: DVR/DVD (for "DIGITAL IN1")
DBS (for "DIGITAL IN2")
VCR (for "DIGITAL IN3")

NOTES

- You cannot assign the same component for different terminals. The priority order for assignment is as follows:
  "DIGITAL IN1" > "DIGITAL IN2" > "DIGITAL IN3."
  Ex.: When "DIGITAL IN1" is set to "DVR/DVD."

DIGITAL IN1	DVR/DVD	DBS	VCR	TV

↓

For "DIGITAL IN2," "DBS," "VCR," and "TV" are selectable.
- In this case, "VCR" is selected.

DIGITAL IN2	DVR/DVD	DBS	VCR	TV

↓

For "DIGITAL IN3," "DBS" and "TV" are selectable.

DIGITAL IN3	DVR/DVD	DBS	VCR	TV

□: Selectable ■: Not selectable

- Setting "DIGITAL IN1" affects "DIGITAL IN2" and "DIGITAL IN3" settings. When you have changed "DIGITAL IN1," confirm the components assigned to "DIGITAL IN2" and "DIGITAL IN3."

Setting Auto Surround—AUTO SURRND

You can enjoy the Surround mode simply by selecting the source (with digital input selected for that source).
- Auto Surround also works when the input mode changes from analog to digital.
- For details about the Surround/DSP modes, see pages 27 to 29.

Select "AUTO SR: ON" when activating Auto Surround.

AUTO SR: ON
The AUTO SR indicator lights up on the display.
- If a multi-channel signal comes in, an appropriate Surround mode will be turned on.
- If a Dolby Digital 2-channel or DTS 2-channel signal with surround signal comes in, "PLII MOVIE" or "NEO:6CINEMA" will be selected.
- If a Dolby Digital 2-channel or DTS 2-channel signal without surround signal comes in, "SURRND OFF (stereo)" will be selected.
- If a Linear PCM signal comes in, nothing will change.

AUTO SR:OFF
Select to deactivate Auto Surround.

Initial setting: AUTO SR:OFF

NOTES

- This function does not take effect in the following cases:
  – While playing an analog source,
  – While selecting any of DSP modes (see page 29), or one of the fixed digital decode mode—"DGTL D.D." or "DGTL DTS" (see page 13), and
  – While listening with the headphones.
- If you press SURROUND with Auto Surround activated, Auto Surround will be canceled temporarily for the currently selected source.
  Auto Surround setting will be restored in the following cases:
  – When you turn the receiver off and on,
  – When you change the source,
  – When you change the analog/digital input, and
  – When you select "AUTO SR: ON" again.

Selecting the component video input mode—DVD VIDEO/VCR VIDEO

When you use the component video inputs for connecting the DVD recorder (or DVD player) or VCR, register the type of video input jacks.
If you have not selected appropriate video input jacks, the AV COMPU LINK remote control system cannot operate properly (see page 32).

For the DVD recorder or DVD player (DVD VIDEO):

DVD : S/C	Select when connecting the DVD recorder (or DVD player) to the composite video or S-video input jacks.
DVD :COMPNT	Select when connecting the DVD recorder (or DVD player) to the component video input jacks.

Initial setting: DVD : S/C

For the VCR (VCR VIDEO):

VCR : S/C	Select when connecting the VCR to the composite video or S-video input jacks.
VCR :COMPNT	Select when connecting the VCR to the component video input jacks.

Initial setting: VCR : S/C

Sound adjustments

You can make sound adjustment to your preference after completing basic setting.

Basic adjustment items

You can adjust the following items. See pages in parentheses for details.

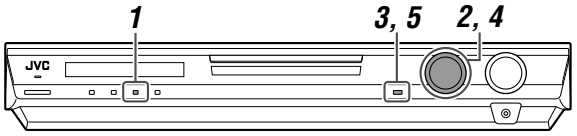
- You cannot select the items which is not available with the current setting.

Items	To do
SUBWFR LVL	Adjust the subwoofer output level. (23)
FRONT L LVL*	Adjust the left front speaker output level. (23)
FRONT R LVL*	Adjust the right front speaker output level. (23)
CENTER LVL*	Adjust the center speaker output level. (23)
SURR L LVL*	Adjust the left surround speaker output level. (23)
SURR R LVL*	Adjust the right surround speaker output level. (23)
S BACK LVL*	Adjust the surround back speaker output level. (23)
EFFECT	Adjust the effect level. (23)
PANORAMA	Add “wraparound” sound effect with side-wall image. (23)
BASS BOOST	Boost the bass level. (24)
INPUT ATT	Attenuate the input level of analog source. (24)
CENTER TONE	Make the center tone soft or sharp. (23)
D EQ 63Hz **D EQ 250Hz** **D EQ 1kHz** **D EQ 4kHz** **D EQ 16kHz**	Adjust the equalization pattern of each band. (24)
CENTER GAIN	Adjust the sound localization of the center channel. (24)
SBWFR PHASE	Select the subwoofer sound phase. (24)

* If you have used Smart Surround Setup on page 16, these settings are not required.

You can also use the remote control for sound adjustment except for the following items:
“PANORAMA,” “INPUT ATT,” “CENTER GAIN,” and “SBWFR PHASE.”

Operating procedure



On the front panel:

Before you start, remember...

There is a time limit in doing the following steps. If the setting is canceled before you finish, start from step ***1*** again.

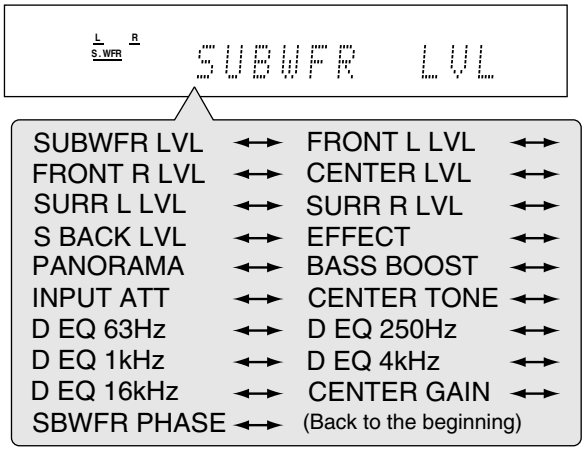
Ex.: When adjusting subwoofer output level.

1 Press ADJUST.

MULTI JOG now works for the sound adjustment.

2 Turn MULTI JOG until the item you want to adjust appears on the display.

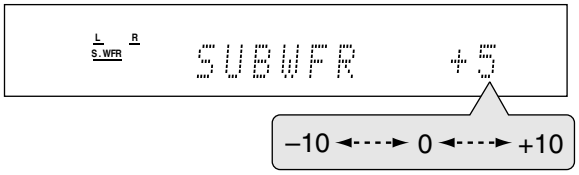
- As you turn MULTI JOG, the adjustment items change as follows:


L R
S.WFR
SUBWFR LVL
SUBWFR LVL ↔ FRONT L LVL ↔
FRONT R LVL ↔ CENTER LVL ↔
SURR L LVL ↔ SURR R LVL ↔
S BACK LVL ↔ EFFECT ↔
PANORAMA ↔ BASS BOOST ↔
INPUT ATT ↔ CENTER TONE ↔
D EQ 63Hz ↔ D EQ 250Hz ↔
D EQ 1kHz ↔ D EQ 4kHz ↔
D EQ 16kHz ↔ CENTER GAIN ↔
SBWFR PHASE ↔ (Back to the beginning)

3 Press SET.

The current setting for the selected item appears.

4 Turn MULTI JOG to adjust the selected item.



Your adjustment is stored.

5 Press SET.

6 Repeat steps *2* to *5* to adjust other items if necessary.

Adjusting speaker output level

- **SUBWFR LVL (subwoofer output level),**
- **FRONT L LVL (left front speaker output level),**
- **FRONT R LVL (right front speaker output level),**
- **CENTER LVL (center speaker output level),**
- **SURR L LVL (left surround speaker output level),**
- **SURR R LVL (right surround speaker output level),**
- **S BACK LVL (surround back speaker output level)**

You can adjust the speaker output levels.
Adjust all the speakers' output levels so that you can listen to the sounds from all the speakers at the same level.
- Once you have made an adjustment, it is memorized for each source.

Adjustable range: –10 (dB) to +10 (dB) (in 1 step intervals)

Initial setting: 0 (dB) for all speakers

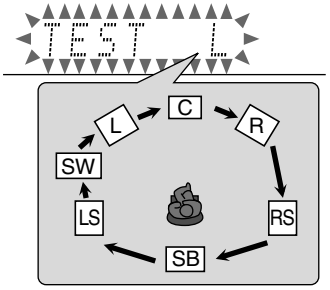
NOTES
- If you have selected "NO" for a speaker (see page 18), the output level for the corresponding speaker is not adjustable.
- While using the headphones, you can adjust only the left and right front speakers' output level.
- If you change one of these settings (except the subwoofer output level) manually, the distance and output level set manually will be applied instead of those set by using Smart Surround Setup.

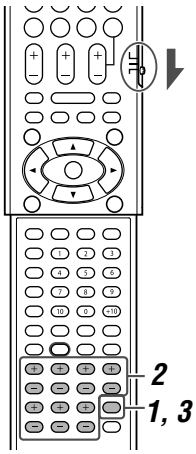
From the remote control:

Set the mode selector to "AUDIO/TV/VCR/DBS."

1 **Press TEST TONE to check the speakers' output balance.**

"TEST L" starts flashing on the display, and a test tone comes out of the speakers in the following order:





2 **Adjust the speaker output levels.**
- If no adjustment is made for about one minute, the test tone will stop.

To adjust the left front speaker level (L), press FRONT L +/–.

To adjust the right front speaker level (R), press FRONT R +/–.

To adjust the center speaker level (C), press CENTER +/–.

To adjust the left surround speaker level (LS), press SURR L +/–.

To adjust the right surround speaker level (RS), press SURR R +/–.

To adjust the surround back speaker level (SB), press S.BACK +/–.

To adjust the subwoofer level (SW), press SUBWFR +/–.

3 **Press TEST TONE again to stop the test tone.**

NOTES
- You can adjust the speaker output levels without the test tone.
- No test tone comes out of the speakers for which the speaker setting is set to "NO" (see page 18).
- No test tone is available when the headphone is in use or "DVD MULTI" is selected.

Adjusting the sound parameters for the Surround/DSP modes

You can adjust the Surround/DSP sound parameters to your preference.
- For details about the Surround/DSP modes, see pages 27 to 31.

Adjusting the effect level for DSP modes—EFFECT

This setting is available only when one of the DSP modes (except ALL CH ST.) is in use. To activate DSP mode, see page 31.
- Once you have made an adjustment, it is memorized for each DSP mode.

Adjustable range: 1 to 5 (in 1 step intervals)

Initial setting: EFFECT 3

As the number increases, the effect becomes stronger.
Normally, select "3."

Adjusting the panorama control for Pro Logic II Music—PANORAMA

This setting is available only when Pro Logic II Music is in use. To activate Pro Logic II Music, see page 31.
- Once you have made an adjustment, it is memorized until you change the setting.
- You cannot use the remote control for this setting.

PANORAMA ON	Select to add "wraparound" sound effect with side-wall image.
PANORAMAOFF	Select to listen to originally recorded sound.

Initial setting: PANORAMAOFF

Adjusting the center tone—CENTER TONE

This setting is available when one of the Surround/DSP modes is in use.
- If you have set "CENTER SPK" to "NO" (see page 18), the center tone is not adjustable.
- This setting is common to all Surround modes, and is memorized separately for DSP modes.

Adjustable range: 1 to 5 (in 1 step intervals)

Initial setting: CNT TONE 3

As the number increases, the dialogue becomes stronger.
Normally, select "3."
- When the center tone is set to other than "CNT TONE 3," the C.TONE indicator lights up on the display.

From the remote control:

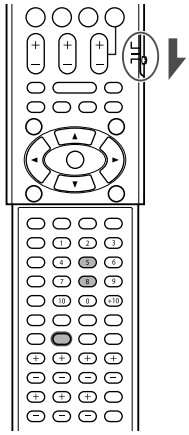
Set the mode selector to "AUDIO/TV/VCR/DBS."

To adjust the effect level:

Press SOUND, then press EFFECT repeatedly.

To adjust the center tone:

Press SOUND, then press C.TONE repeatedly.



NOTE

After pressing SOUND, the numeric buttons work for sound adjustments. To use the numeric buttons to operate your target source, press the corresponding source selecting button before operation; otherwise, the remote control may not work as you intend.

Adjusting the sound localization of the center channel—CENTER GAIN

This setting is available only when Neo:6 Music is in use.
- If you have set “CENTER SPK” to “NO” (see page 18), the center gain is not adjustable.
- Once you have made an adjustment, it is memorized until you change the setting.
- You cannot use the remote control for this setting.

Adjustable range: 0 to 0.5 (in 0.1 step intervals)

Initial setting: C GAIN 0.2

As the number increases, the center channel will be localized clearly.
Normally, select “0.2.”

Adjusting the bass sounds

Reinforcing the bass—BASS BOOST

You can boost the bass level—Bass Boost.
- Once you have made an adjustment, it is memorized for each source.

B.BOOST ON	Select to boost the bass level. The BASS indicator lights up on the display.
B.BOOST OFF	Select to deactivate the Bass Boost.

Initial setting: B.BOOST OFF

NOTE

This function affects only the sound coming out through the front speakers.

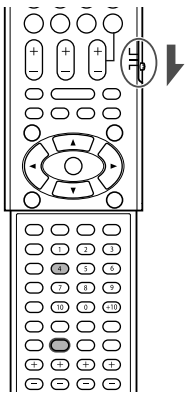
From the remote control:

Set the mode selector to “AUDIO/TV/VCR/DBS.”

Press SOUND, then press BASS BOOST repeatedly.
- Each time you press BASS BOOST, the Bass Boost turns on and off alternately.

NOTE

After pressing SOUND, the numeric buttons work for sound adjustments. To use the numeric buttons to operate your target source, press the corresponding source selecting button before operation; otherwise, the remote control may not work as you intend.



Attenuating the input signal—INPUT ATT

When the input level of **analog source** is too high, the sound will be distorted. If this happens, you need to attenuate the input signal level to prevent the sound distortion.
- Once you have made an adjustment, it is memorized for each source.
- You cannot use the remote control for this setting.

ATT ON	Select to attenuate the input signal level. The ATT indicator lights up on the display.
ATT NORMAL	Select to deactivate attenuation.

Initial setting: ATT NORMAL

Selecting the subwoofer sound phase—SBWFR PHASE

You can change the subwoofer sound phase to your preference.
- Once you have made an adjustment, it is memorized for each source.
- You cannot use the remote control for this setting.

PHASE NORM.	Normally select this.
PHASE REV.	Select this when you feel the bass sound is better with this mode rather than with “PHASE NORM.”

Initial setting: PHASE NORM.

NOTE

This function takes effect only when “SUBWOOFER” is set to “SUBWFR :YES” (see page 18).

Adjusting the equalization patterns—D EQ 63Hz/250Hz/1kHz/4kHz/16kHz

You can adjust equalization patterns in five frequency bands (center frequency: 63 Hz, 250 Hz, 1 kHz, 4 kHz, 16 kHz) for the front speakers.
- Once you have made an adjustment, it is memorized for each source.

Adjustable range: –8 (dB) to +8 (dB) (in 2 dB intervals)

Initial setting: 0 (dB) for all bands
- When adjustment is made, the EQ indicator lights up on the display.

If no adjustment is required, set all the frequency bands to “0 (dB).”
- The EQ indicator goes off from the display.

From the remote control:

Before you start, remember...

There is a time limit in doing the following steps. If the setting is canceled before you finish, start from step ***2*** again.

Set the mode selector to “AUDIO/TV/VCR/DBS.”

1 **Press SOUND.**

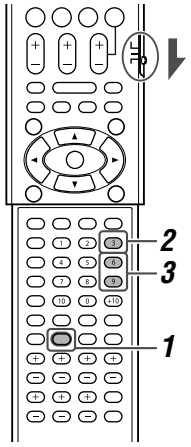
2 **Press EQ FREQ repeatedly to select the band you want to adjust.**

3 **Press EQ LEVEL +/– to adjust the equalization pattern of the selected band.**

4 **Repeat steps *2* and *3* to adjust other bands.**

NOTE

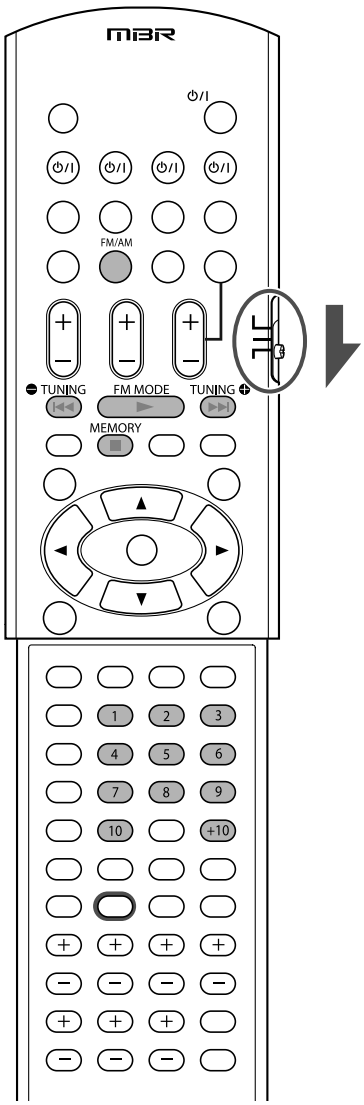
After pressing SOUND, the numeric buttons work for sound adjustments. To use the numeric buttons to operate your target source, press the corresponding source selecting button before operation; otherwise, the remote control may not work as you intend.



Tuner operations

Tuner operations are mainly done from the remote control.

When operating the receiver using the remote control, set the mode selector to "AUDIO/TV/VCR/DBS."



NOTE

When you have selected "FM" or "AM" by using SOURCE SELECTOR on the front panel, the remote control may not work for tuner operations. To use the remote control for tuner operations, select "FM" or "AM" by using the source selecting button on the remote control.

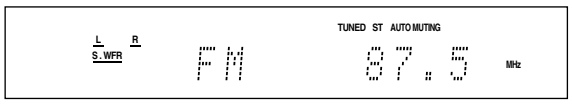
Tuning in to stations manually

From the remote control ONLY:

1 Press FM/AM to select the band.

The last received station of the selected band is tuned in.

- Each time you press the button, the band alternates between FM and AM.



2 Press repeatedly or hold TUNING ⊕ or ⊖ TUNING until the station you want is tuned in.

- Pressing (or holding) TUNING ⊕ increases the frequency.
- Pressing (or holding) ⊖ TUNING decreases the frequency.

NOTES

- When you hold and release TUNING ⊕ or ⊖ TUNING, the frequency keeps changing until a station is tuned in.
- When a station of sufficient signal strength is tuned in, the TUNED indicator lights up on the display.
- When an FM stereo program is received, the ST (stereo) indicator also lights up.

Using preset tuning

Once a station is assigned a channel number, the station can be quickly tuned simply by selecting the number. You can preset up to 30 FM and 15 AM stations.

To store the preset stations

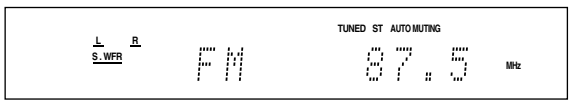
Before you start, remember...

There is a time limit in doing the following steps. If the setting is canceled before you finish, start from step ***2*** again.

From the remote control ONLY:

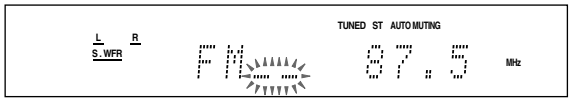
1 Tune in to the station you want to preset (see "Tuning in to stations manually" above).

- If you want to store the FM reception mode for this station, select the FM reception mode you want. See "Selecting the FM reception mode" on page 26.



2 Press MEMORY.

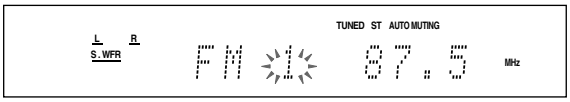
The channel number position starts flashing on the display for about 5 seconds.



CONTINUED ON THE NEXT PAGE

3 Press the numeric buttons (1 – 10, +10) to select a channel number while the channel number position is flashing.

- For channel number 5, press 5.
- For channel number 15, press +10, then 5.
- For channel number 30, press +10, +10, then 10.



4 Press MEMORY again while the selected channel number is flashing on the display.

The selected channel number stops flashing.
The station is assigned to the selected channel number.

5 Repeat steps 1 to 4 until you store all the stations you want.

To erase a stored preset station

Storing a new station on a used channel number erases the previously stored one.

To tune in a preset station

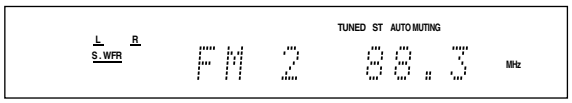
From the remote control:

1 Press FM/AM to select the band.

The last received station of the selected band is tuned in and the numeric buttons now work for tuner operations.

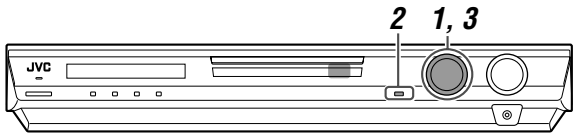
- Each time you press the button, the band alternates between FM and AM.

2 Press the numeric buttons (1 – 10, +10) to select a preset channel number.



- For channel number 5, press 5.
- For channel number 15, press +10, then 5.
- For channel number 30, press +10, +10, then 10.

On the front panel:



Before you start, remember...

There is a time limit in doing the following steps. If the setting is canceled before you finish, start from step **2** again.

1 Turn SOURCE SELECTOR to select "FM" or "AM."

The last received station of the selected band is tuned in.

2 Press TUNER PRESET.

"P" appears on the display and MULTI JOG now works for selecting preset channels.

3 Turn MULTI JOG to select a preset channel number while "P" appears on the display.

- To increase the preset channel numbers, turn MULTI JOG clockwise.
- To decreases the preset channel numbers, turn MULTI JOG counterclockwise.

Selecting the FM reception mode

When an FM stereo broadcast is hard to receive or noisy, you can change the FM reception mode while receiving an FM broadcast.

- You can store the FM reception mode for each preset station (see page 25).

From the remote control ONLY:

While listening to an FM station, press FM MODE.

- Each time you press the button, the FM reception mode alternates between "AUTO MUTING" and "MONO."

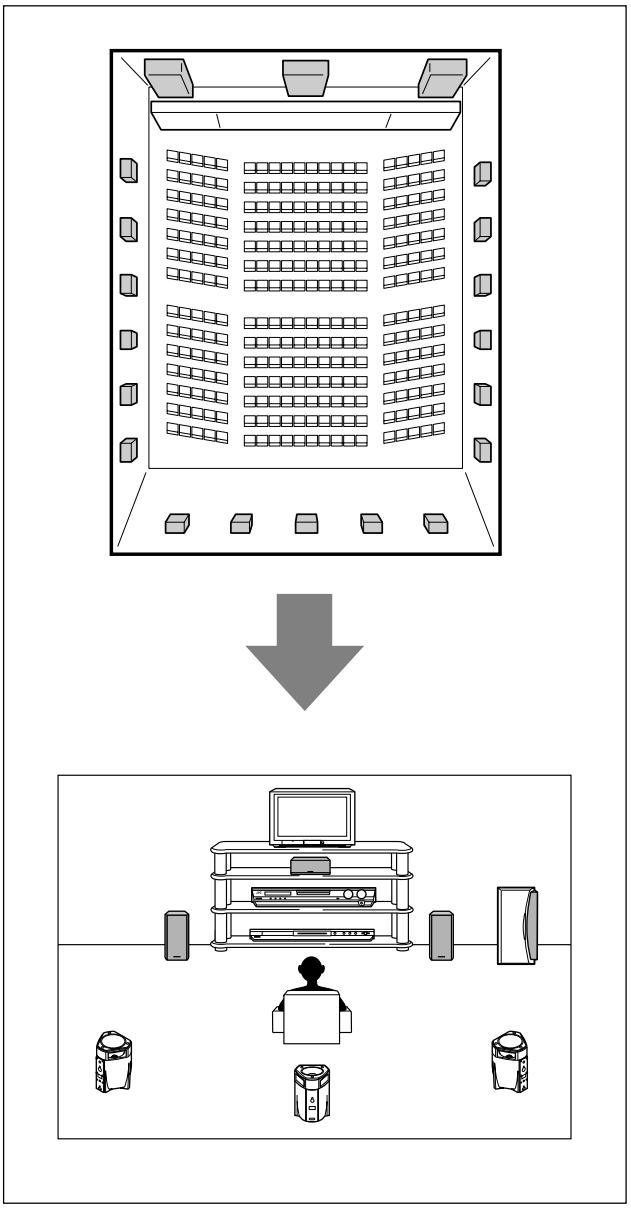
AUTO MUTING	Normally select this. When a program is broadcast in stereo, you will hear stereo sound; when in monaural, you will hear monaural sound. This mode is also useful to suppress static noise between stations. The AUTO MUTING indicator lights up on the display.
MONO	Select this to improve the reception (but stereo effect will be lost). In this mode, you will hear noise while tuning in to the stations. The AUTO MUTING indicator goes off from the display. (The ST indicator also goes off.)

Initial setting: AUTO MUTING

Creating realistic sound fields

Reproducing theater ambience

In a movie theater, many speakers are located on the walls to reproduce impressive multi-channel sound, reaching you from all directions.
With these many speakers, sound localization and sound movement can be expressed.
Surround/DSP modes built in this receiver can create almost the same Surround sound as you can feel in a real movie theater.



Introducing the Surround modes

■ Dolby Digital*

Dolby Digital is a digital signal compression method, developed by Dolby Laboratories, and enables multi-channel encoding and decoding.

- When Dolby Digital signal is detected through the digital input, the **DOLBY D** indicator lights up on the display.

Dolby Digital 5.1CH

Dolby Digital 5.1CH (DOLBY D) encoding method records and digitally compresses the left front channel, right front channel, center channel, left surround channel, right surround channel, and LFE channel signals (total 6 channels, but the LFE channel is counted as 0.1 channel. Therefore, called 5.1 channel).
Dolby Digital enables stereo surround sounds, and sets the cutoff frequency of the surround treble at 20 kHz, compared to 7 kHz for Dolby Pro Logic. As such, the sound movement and "being-there" feeling are enhanced much more than Dolby Pro Logic.

Dolby Digital EX

Dolby Digital EX (DOLBY D EX) is a digital surround encoding format that adds the third surround channels, called "surround back."
Compared to the conventional Dolby Digital 5.1CH, these newly added surround back channels can reproduce more detailed movements behind you while viewing the video software. In addition, surround sound localization will become more stable.

■ Dolby Surround

Dolby Pro Logic II

Dolby Pro Logic II is a multi-channel playback format to convert 2-channel software into 5-channel (plus subwoofer). The matrix-based conversion method used for Dolby Pro Logic II makes no limitation for the cutoff frequency of the surround treble and enables stereo surround sound.

- This receiver provides two types of Dolby Pro Logic II modes—**Pro Logic II Movie** (PLII MOVIE) and **Pro Logic II Music** (PLII MUSIC).
  When Dolby Pro Logic II is activated, the DD PL II indicator lights up on the display.

PLII MOVIE	Suitable for playing any Dolby Surround encoded software. You can enjoy a sound field very close to the one created with discrete 5.1-channel sounds.
PLII MUSIC	Suitable for playing any 2-channel stereo software. You can enjoy wide and deep sounds.

- To enjoy software encoded with Dolby Digital, connect the source component using the digital terminal on the rear of this receiver. (See page 11.)

* Manufactured under license from Dolby Laboratories. "Dolby", "Pro Logic", and the double-D symbol are trademarks of Dolby Laboratories.

■ DTS**

DTS is another digital signal compression method, developed by Digital Theater Systems, Inc., and enables multi-channel encoding and decoding (1ch up to 6.1ch).

- When DTS signal is detected through the digital input, the **DTS** indicator lights up on the display.

DTS Digital Surround

DTS Digital Surround (DTS) is another discrete 5.1 channel digital audio format available on CD, LD, and DVD software. Compared to Dolby Digital, the DTS Digital Surround format has a lower audio compression rate which enables it to add breadth and depth to the sounds reproduced. As such, DTS Digital Surround features natural, solid, and clear sound.

DTS Extended Surround (DTS-ES)

DTS-ES is another multi-channel digital encoding format.
It greatly improves the 360-degree surround impression and space expression by adding the third surround channel—surround back channel.
DTS-ES includes two signal formats with different surround signal recording methods—**DTS-ES Discrete 6.1ch** (ES DISCRETE) and **DTS-ES Matrix 6.1ch** (ES MATRIX).
DTS-ES Discrete 6.1ch has been designed to encode (and decode) a 6.1-channel signal discretely to avoid interference with each channel.
DTS-ES Matrix 6.1ch has been designed to add an extra surround channel to DTS Digital Surround 5.1-channel. By using a matrix encoding/decoding method, an additional "surround back" channel signal is encoded (and decoded) in both the left and right surround channel signals.

DTS 96/24

In recent years, there has been increasing interest in higher sampling rates both for recording and for reproducing at home. Higher sampling rates allow wider frequency range and greater bit depths provide extended dynamic range.
DTS 96/24 is a multi-channel digital signal format (fs 96 kHz/24 bits) introduced by Digital Theater Systems, Inc. to deliver "better-than-CD sound quality" into the home.

- When DTS 96/24 signal is detected, the DTS and 96/24 indicators light up. You can enjoy its 5.1-channel sound with full-quality.

DTS Neo:6

DTS Neo:6 is another conversion method to create 6-channel (plus subwoofer) from analog/digital 2-channel software by using the high precision digital matrix decoder used for DTS-ES Matrix 6.1ch.

- This receiver provides the following DTS Neo:6 modes—**Neo:6 Cinema** (NEO:6CINEMA) and **Neo:6 Music** (NEO:6 MUSIC). When one of them is activated, the NEO:6 indicator lights up on the display.

NEO:6CINEMA	Suitable for playing movies. You can get the same atmosphere with 2-channel software as with 6.1-channel software. It is also effective for playing software encoded with conventional surround formats.
NEO:6 MUSIC	Suitable for playing music software. The front channel signals bypass the decoder (resulting in no loss of sound quality) and the surround signals transmitted through the other speakers expand the sound field naturally.

** "DTS", "DTS-ES", "Neo:6" and "DTS 96/24" are trademarks of Digital Theater Systems, Inc.

When using Surround mode, the sounds come out of the activated speakers which the Surround mode requires.

- **If either the surround speakers or center speaker is set to "NO" in the speaker setting (see page 18),** the corresponding channel signals are allocated to and emitted through the front speakers.
- **If both the surround speakers and center speaker are set to "NO" in the speaker setting (see page 18),** JVC's original 3D-PHONIC processing (which has been developed to create the surround effect through the front speakers only) is used. The 3D indicator lights up on the display.

3D HEADPHONE mode

If you connect a pair of headphones while one of the Surround modes is in use, the 3D HEADPHONE mode is activated without respect to the type of software played back. "3DHEADPHONE" appears on the display and the DSP, 3D, and HP indicators light up.

About other digital signals

Linear PCM

Uncompressed digital audio data used for DVDs, CDs, and Video CDs.
DVDs support 2 channels with sampling rates of 48/96 kHz, at quantization of 16/20/24 bits. On the other hand, CDs and Video CDs are limited to 2 channels with 44.1 kHz at 16 bits.

- When Linear PCM signal is detected, the LPCM indicator lights up.

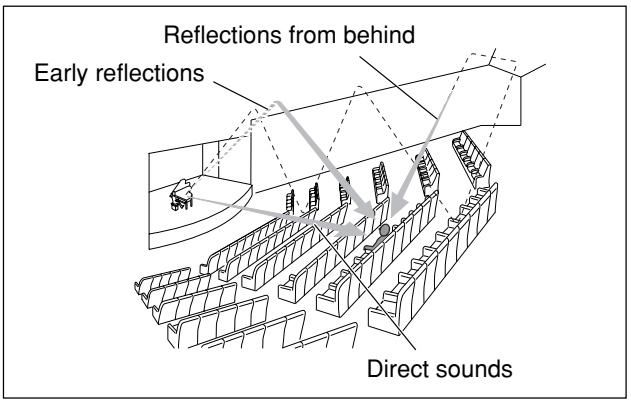
Dual Mono

Dual Mono can be easily understood when you think of the bilingual broadcast for TV programs (however, the Dual Mono format is not identical with those analog formats).
This format is now adopted in Dolby Digital, DTS, and so on. It allows two independent channels (called main channel and sub-channel) to be recorded separately.

- You can select either channel you want to listen to (see page 20).

Introducing the DSP modes

The sound heard in a concert hall, club, etc. consists of direct sound and indirect sound—early reflections and reflections from behind. Direct sounds reach the listener directly without any reflection. On the other hand, indirect sounds are delayed by the distances of the ceiling and walls. These direct sounds and indirect sounds are the most important elements of the acoustic surround effects.
The DSP modes can create these important elements, and give you a real "being there" feeling.



The DSP modes include the following modes:
- Digital Acoustic Processor (DAP) modes—HALL1, HALL2, LIVE CLUB, DANCE CLUB, PAVILION, THEATER1, THEATER2
- MONO FILM—Used for all types of 2-channel signals (including Dual Mono signal)
- All Channel Stereo mode (ALL CH ST.)

When one of the DSP modes is activated, the DSP indicator lights up on the display.

■ Digital Acoustic Processor (DAP) modes

You can use the following DAP modes in order to reproduce a more acoustic sound field in your listening room.

HALL1	Reproduces the spatial feeling of a large shoebox-shaped hall designed primarily for classical concerts. (Its seating capacity is about 2000.)
HALL2	Reproduces the spatial feeling of a large vineyard-shaped hall designed primarily for classical concerts. (Its seating capacity is about 2000.)
LIVE CLUB	Reproduces the spatial feeling of a live music club with a low ceiling.
DANCE CLUB	Reproduces the spatial feeling of a rocking dance club.
PAVILION	Reproduces the spatial feeling of an exhibition hall with a high ceiling.
THEATER1	Reproduces the spatial feeling of a large theater where the seating capacity is about 600.
THEATER2	Reproduces the spatial feeling of a small theater where the seating capacity is about 300.

NOTE

When "THEATER1" or "THEATER2" is activated while playing back 2-channel analog or digital source, the built-in Dolby Pro Logic II decoder is activated and the DOLBY PL II indicator lights up.

When using the DAP mode, the sounds come out of all the connected and activated speakers.

- **If the surround speakers are set to "NO" in the speaker setting (see page 18),** JVC's original 3D-PHONIC processing (which has been developed to create the surround effect through the front speakers only) is used.
  The 3D indicator lights up on the display.

■ MONO FILM

In order to reproduce a more acoustic sound field in your listening room while viewing monaural sound video software (analog and 2-channel digital signals including Dual Mono signal), you can use this mode.
The surround effect will be added, and the sound localization of actor's words will be improved.

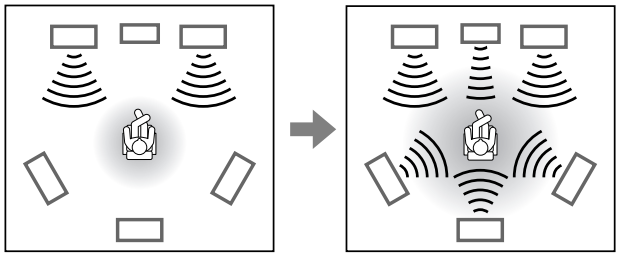
This mode cannot be used for multi-channel digital signals.

When "MONO FILM" is used, sounds come out of all the connected (and activated) speakers.

- **If the surround speakers are set to "NO" in the speaker setting (see page 18),** JVC's original 3D-PHONIC processing (which has been developed to create the surround effect through the front speakers only) is used.
  The 3D indicator lights up on the display.
- If incoming signals change from 2-channel digital signal to another digital signal type, "MONO FILM" is canceled and an appropriate Surround mode is activated.

■ All Channel Stereo mode (ALL CH ST.)

This mode can reproduce a larger stereo sound field using all the connected (and activated) speakers. **This mode cannot be used if the surround speakers are set to "NO" in the speaker setting (see page 18).**



Sound reproduced from normal stereo

Sound reproduced from All Channel Stereo mode

3D HEADPHONE mode

If you connect a pair of headphones while one of the DSP modes is in use, the 3D HEADPHONE mode is activated without respect to the type of software played back. "3DHEADPHONE" appears on the display and the DSP, 3D, and HP indicators light up.

Using the Surround/DSP modes

Available Surround/DSP modes vary depending on the speaker settings and the incoming signals. See the table below.

- The numbers inside the parentheses following the incoming signal type indicate the number of the front channels and that of the surround channels. For example, (3/2) indicates that the signals are encoded with three front signals (left/right/center) and two (stereo) surround signals.
- For EX/ES setting, see page 20.

Incoming signal	Surround back speaker setting (SML/LRG/NO)	EX/ES setting (AUTO/ON/OFF)	Surround mode	DSP modes
Dolby Digital EX	**SML/LRG**	**AUTO/ON**	DOLBY D EX	HALL1/2, LIVE CLUB, DANCE CLUB, PAVILION, THEATER1/2, ALL CH ST.
		OFF	DOLBY D	
	NO	**AUTO/ON**	DOLBY D (Virtual Surround Back)	
		OFF	DOLBY D	
Dolby Digital (3/2, 2/2)	**SML/LRG**	**ON**	DOLBY D EX	
		AUTO/OFF	DOLBY D	
	NO	**ON**	DOLBY D (Virtual Surround Back)	
		AUTO/OFF	DOLBY D	
Dolby Digital (3/1, 2/1, 3/0, 1/0)	**SML/LRG/NO**	**AUTO/ON/OFF**	DOLBY D	
DTS-ES Discrete 6.1 ch	**SML/LRG**	**AUTO/ON**	ES DISCRETE	
		OFF	DTS	
	NO	**AUTO/ON**	DTS (Virtual Surround Back)	
		OFF	DTS	
DTS-ES Matrix 6.1 ch DTS-ES 96/24 Matrix	**SML/LRG**	**AUTO/ON**	ES MATRIX	
		OFF	DTS	
	NO	**AUTO/ON**	DTS (Virtual Surround Back)	
		OFF	DTS	
DTS, DTS 96/24 (3/2, 2/2)	**SML/LRG**	**ON**	DTS NEO:6	
		AUTO/OFF	DTS	
	NO	**ON**	DTS (Virtual Surround Back)	
		AUTO/OFF	DTS	
DTS (3/1, 2/1, 3/0, 1/0)	**SML/LRG/NO**	**AUTO/ON/OFF**	DTS	

Incoming signals	Available Surround modes	Available DSP modes
Dolby Digital (Dual Mono)	DUAL MONO	HALL1/2, LIVE CLUB, DANCE CLUB, PAVILION, THEATER1/2, MONO FILM, ALL CH ST.
DTS (Dual Mono)		
Dolby Digital (2-channel)	PLII MOVIE, PLII MUSIC, NEO:6CINEMA, NEO:6 MUSIC	
DTS (2-channel)		
Linear PCM		
Analog		
DVD MULTI	None	None

NOTES

- For some Dolby Digital EX software, Dolby Digital 5.1-channel reproduction (“DOLBY D”) is applied.
- DTS 96/24 processing is not applied when the EX/ES setting is activated. If you want to apply the processing, set the EX/ES setting to “EX/ES : OFF” (see page 20).
- You cannot select “ALL CH ST.” when the surround speakers are set to “NO” in the speaker setting (see page 18).

Virtual Surround Back

If you have connected (and activated) the surround speakers, you can use Virtual Surround Back when playing back Dolby Digital EX or DTS-ES software without connecting the surround back speaker.
This function creates the great surround effect from the behind as if you have connected the surround back speaker. The VIRTUAL SB (Surround Back) indicator lights up on the display.

Activating the Surround/DSP modes

Available Surround/DSP modes vary depending on the speaker settings and the incoming signals. For details, see page 30.

Activating one of the Surround/DSP modes automatically recalls the memorized settings and adjustments.

- **To adjust the speaker output level,** see page 23.
- **To adjust the effect level for the DSP mode (except All Channel Stereo mode),** see page 23.
- **To add "wraparound" sound effect to "PLII MUSIC" (PANORAMA control),** see page 23.
- **To adjust the sound localization of the center channel for "NEO:6 MUSIC" (center gain),** see page 24.

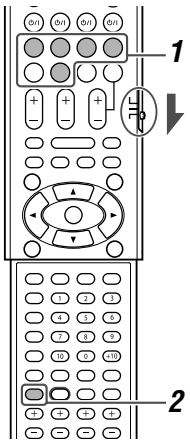
NOTES

- You cannot use any Surround/DSP modes when selecting "DVD MULTI" as the playback source.
- You cannot select All Channel Stereo mode if the surround speakers are set to "NO" in the speaker setting (see page 18).

If "AUTO SURRND (Auto Surround)" is set to "ON"

You can enjoy Surround mode simply by playing back multi-channel software (with digital input selected for that source). To activate Auto Surround, see page 21.

From the remote control:



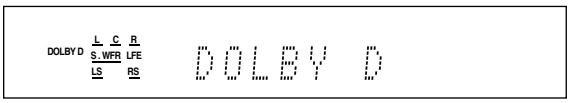
When operating the receiver using the remote control, set the mode selector to "AUDIO/TV/VCR/DBS."

1 Select and play any source other than "DVD MULTI."

- Make sure you have selected the input mode (analog or digital) correctly.

2 Press SURROUND repeatedly to select the Surround/DSP mode you want.

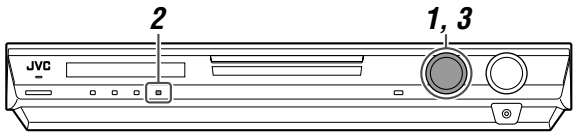
Ex.: When "DOLBY D" is selected for Dolby Digital multi-channel software:



To cancel Surround/DSP modes

Press SURROUND repeatedly so that "SURRND OFF" appears on the display.

On the front panel:



Before you start, remember...

There is a time limit in doing the following steps. If the setting is canceled before you finish, start from step ***2*** again.

1 Select and play any source other than "DVD MULTI."

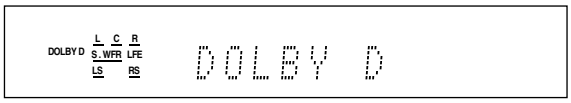
- Make sure you have selected the input mode (analog or digital) correctly.

2 Press SURROUND.

MULTI JOG now works for selecting Surround/DSP modes.

3 Turn MULTI JOG to select the Surround/DSP mode you want.

Ex.: When "DOLBY D" is selected for Dolby Digital multi-channel software:



To cancel Surround/DSP modes

Turn MULTI JOG so that "SURRND OFF" appears on the display.

AV COMPU LINK remote control system

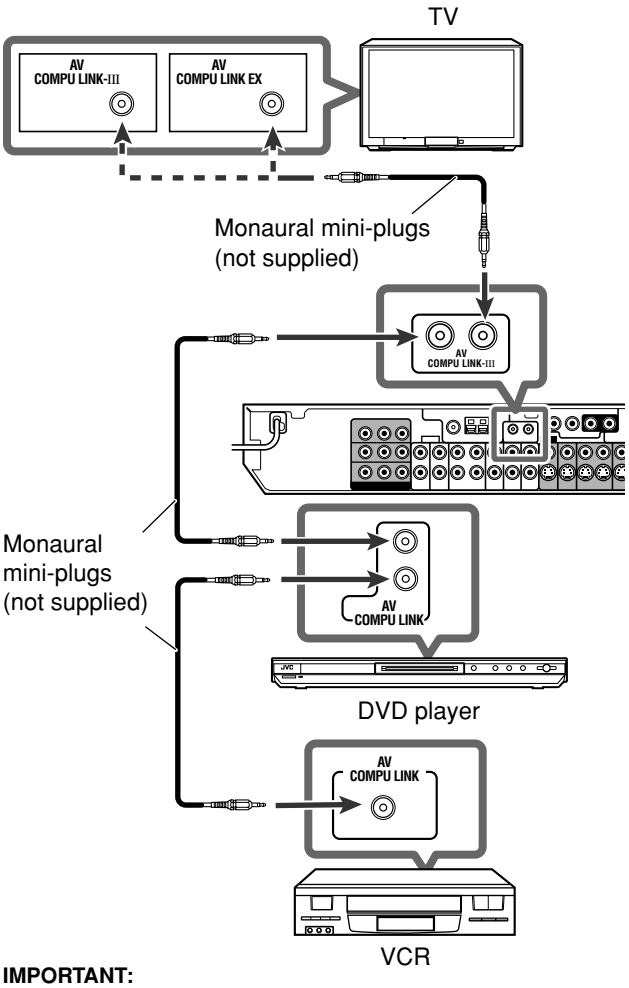
The AV COMPU LINK remote control system allows you to operate JVC's video components (TV, DVD player*, and VCR) through this receiver.

This receiver is equipped with the AV COMPU LINK-III, which has added a function to operate JVC's video components through the component video jacks. To use this remote control system, you need to connect the video components you want to operate, following the diagrams below and the procedures on page 33.

- Refer also to the manuals supplied with your video components.

* "DVD player" on pages 32 and 33 can be replaced with "DVD recorder."

Connections 1: AV COMPU LINK connection



IMPORTANT:

The AV COMPU LINK remote control system cannot control the DBS tuner connected to the DBS IN jacks.

NOTES

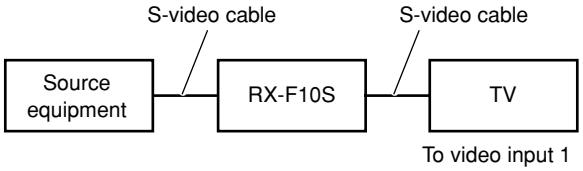
- When connecting the receiver and a TV with the AV COMPU LINK EX terminal by using a component video cable, you cannot use Automatic selection of TV's input mode (see page 33).
- When connecting only the VCR and DVD player to this receiver, connect it directly to the receiver using cable with the monaural mini-plugs.
- You can connect only the TV with AV COMPU LINK EX or AV COMPU LINK-III terminal to the AV COMPU LINK-III terminal.

Connections 2: Video cable connection

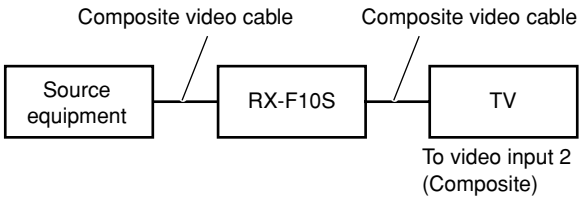
This receiver is equipped with three types of the video terminals—composite video, S-video, and component video, and the signals coming into this receiver through one type of video terminals can output only through the terminal of the same type. So you need to connect the video components to this receiver using one of the following three ways.

- When using the AV COMPU LINK remote control system, set the video input for the DVD player and the VCR correctly (see "Selecting the component video input mode—DVD VIDEO/VCR VIDEO" on page 21); otherwise, the correct input for this receiver will not be selected on the TV.

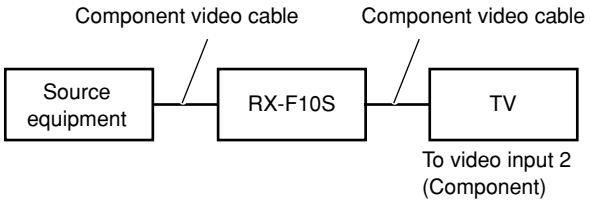
Case 1:
When connecting the source equipment to the receiver through the S-video terminals, connect this receiver to the TV's video input 1 terminal using S-video cables.



Case 2:
When connecting the source equipment to the receiver through the composite video jacks, connect this receiver to the TV's video input 2 terminal (composite video input) using composite video cables.



Case 3:
When connecting the source equipment to the receiver through the component video jacks, connect this receiver to the TV's video input 2 terminals (component video input) using component video cables.



Connecting procedure

1 If you have already plugged your VCR, DVD player, TV, and this receiver into the AC outlets, unplug their AC power cords first.

2 Connect your VCR, DVD player, TV, and this receiver as follows, using the cables with the monaural mini-plugs (not supplied).

- See “Connections 1” on the previous page.

3 Connect the audio input/output jacks on the VCR, DVD player, TV, and this receiver using the audio cables.

- See pages 7 to 10.

4 Connect the video input/output jacks on the VCR, DVD player, TV, and this receiver using the S-video cables, composite video cables, or component video cables.

- See “Connections 2” on the previous page.

5 Plug the AC power cords of the connected components and this receiver into the AC outlets.

6 When turning on the TV for the first time after the AV COMPU LINK connection, turn the TV volume to the minimum using the TV volume control on the TV.

7 Turn on other connected components first, then turn on this receiver.

- When turning on the VCR, use the remote control supplied with this receiver (press VCR ⏻/I).

The AV COMPU LINK remote control system allows you to use the five basic functions listed below.

Remote control of the TV, DVD player, and VCR using this remote control

See pages 34 and 35 for details.

- Aim the remote control directly at **the remote sensor on each component.**

One-touch video play

Simply by inserting a video cassette without its safety tab into the VCR, you can enjoy the video playback without setting other switches manually. The receiver automatically turns on and changes the source to “VCR” (or “VCR DIGITAL”).
The TV automatically turns on and changes the input mode to the appropriate position so that you can view the playback picture.
When you insert a video cassette with its safety tab, press the play (►) button on the VCR or on the remote control. So, you can get the same result.

One-touch DVD play

Simply by starting playback on the DVD player, you can enjoy the DVD playback without setting other switches manually.

- When the DVD player is connected through the analog input jacks on this receiver (and analog input is selected), the receiver automatically turns on and changes the source to “DVR/DVD” or “DVD MULTI.”
- When the DVD player is connected through the digital input terminal on this receiver (and digital input is selected), the receiver automatically turns on and changes the source to “DVR/DVD DGT.”

The TV automatically turns on and changes the input mode to the appropriate position so that you can view the playback picture.

Automatic selection of TV’s input mode

- When you select “TV” (or “TV DIGITAL”) as the source to play on the receiver, the TV automatically changes the input mode to the TV tuner so that you can watch TV.
- When you select “DVR/DVD” (or “DVR/DVD DGT”), “DVD MULTI,” “VCR” (or “VCR DIGITAL”), or “DBS” (or “DBS DIGITAL”) as the source to play on the receiver, the TV automatically changes the input mode to the appropriate position (either video input 1 or video input 2) so that you can view the playback picture.

NOTE

This function does not work when you connect this receiver and the TV with the AV COMPU LINK EX terminal using a component video cable. In this case, reconnect the TV referring to Case 1 or Case 2 on page 32.

Automatic power on/off

The TV, DVD player, and VCR turn on and off along with the receiver.
When you turn on the receiver;

- If the previously selected source is “TV” (or “TV DIGITAL”) or “DBS” (or “DBS DIGITAL”), only the TV will turn on automatically.
- If the previously selected source is “DVR/DVD” (or “DVR/DVD DGT”) or “DVD MULTI,” the TV and DVD player will turn on automatically.
- If the previously selected source is “VCR” (or “VCR DIGITAL”), the TV and VCR will turn on automatically.

When you turn off the receiver, the TV, DVD player, and VCR will turn off.

NOTE

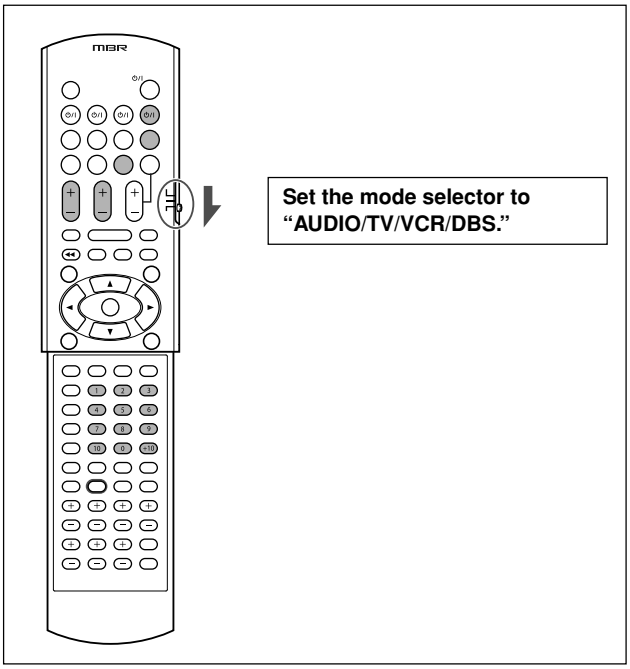
If you turn off the receiver while recording on the VCR, the VCR will not turn off, but continue recording.

Operating other JVC products

You can use the supplied remote control to operate not only this receiver but also other JVC products.

- Refer also to the manuals supplied with the other products.
  – Some JVC VCRs can accept two types of the control signals—remote codes “A” and “B.” This remote control can operate a VCR whose remote control code is set to “A.”
  – Some JVC DVD recorders can accept four types of the control signals. This remote control can operate a DVD recorder whose remote control code is set to the initial code. For details, refer to the manual supplied with the DVD recorder.
- To operate other products, aim the remote control directly at the remote sensor on the target product.

■ TV



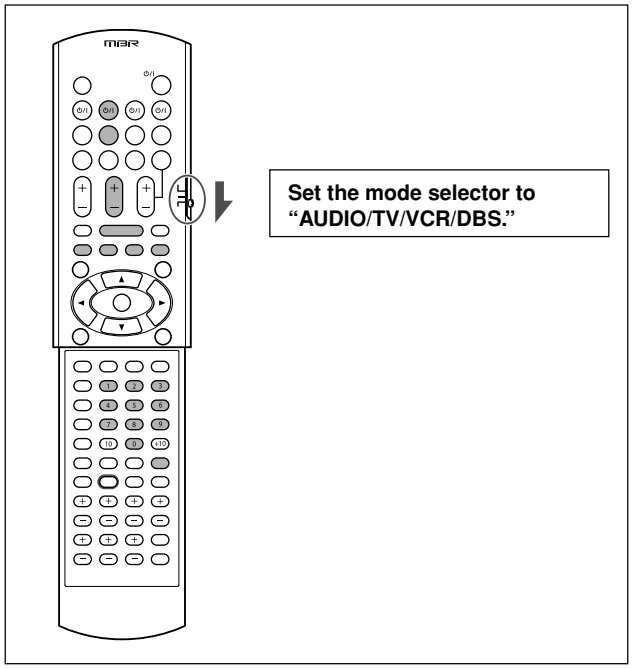
You can always perform the following operations:

TV ⏻/I:	Turn on or off the TV.
TV VOL +/–:	Adjust the volume on the TV.
TV/VIDEO:	Change the input mode (either video input or TV tuner) on the TV.

After pressing TV, you can perform the following operations on the TV.

CHANNEL +/–:	Change the channel numbers.
1 – 9, 0, 100+:	Select the channel numbers.
TV RETURN (10):	Function as the TV RETURN button. (Switches between the previous channel and the current channel.)

■ VCR



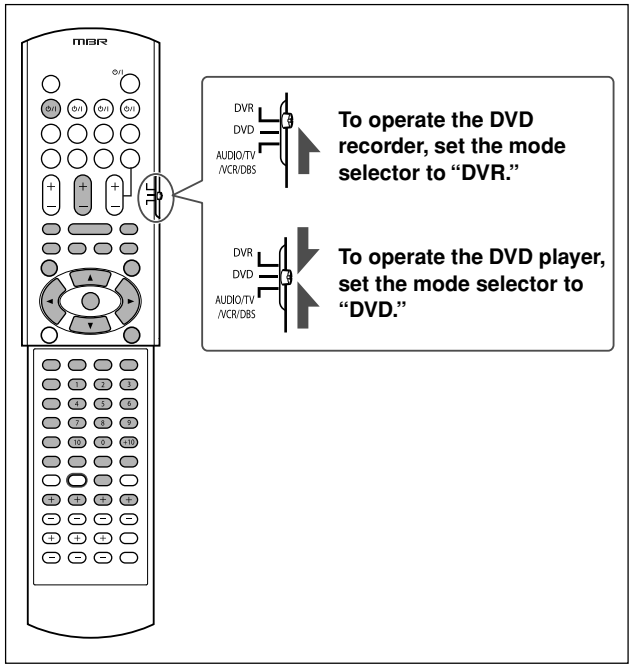
You can always perform the following operation:

VCR ⏻/I:	Turn on or off the VCR.

After pressing VCR, you can perform the following operations on the VCR.

CHANNEL +/–:	Change the channel numbers on the VCR.
1 – 9, 0:	Select the channel numbers on the VCR.
►:	Start playback.
■:	Stop playback.
II:	Pause playback. To release it, press ►.
►►:	Fast-wind a tape.
◄◄:	Rewind a tape.
REC PAUSE:	Enter recording pause. To start recording, press this button then ►.

■ DVD recorder or DVD player



After setting the mode selector correctly, you can perform the following operations on the DVD recorder or DVD player.

See the instructions supplied with the DVD recorder or DVD player for details.

DVR/DVD ⏻/I:	Turn on or off the DVD recorder or DVD player.
►:	Start playback.
■:	Stop playback.
II:	Pause playback. To release it, press ►.
►►I:	Skip to the beginning of the next chapter.
I◄◄:	Return to the beginning of the current (or previous) chapter.
►►:	Fast-forward playback.
◄◄:	Fast-reverse playback.
TOP MENU/MENU:	Display the menu recorded on discs.
ON SCREEN:	Shows the on-screen bar.
▲/▼/►/◄:	Select an item on the menu screen.
ENTER:	Enter the selected item, channel number, chapter/title number, or track number (if required).

You can also use the following buttons to operate JVC DVD recorder and/or DVD player if it supports the corresponding function:

For various settings:

AUDIO*:	Select the audio language/channel.
SUBTITLE:	Select the subtitle language.
SET UP:	Display the Preference display.
VFP:	Show the picture adjustment screen.
PROGRESSIVE*:	Change the scanning mode.
ANGLE:	Select the view angle.

* Press and hold when using these buttons.

For various playback:

↶ (one touch replay):	Move the playback position back 10 seconds before the current position.
RETURN:	Return to the main menu during menu operation.
CANCEL:	Cancel the programmed track, etc.

Only for DVD recorder operations:

CHANNEL +/–:	Change the channel numbers.
DVD/HDD:	Select the DVD recorder or HDD deck. (Only for a DVD recorder incorporated with HDD deck.)
↷ (skip):	Move the playback position ahead 30 seconds after the current position.
1 – 9, 0:	Select a channel number (while stopped) or a chapter/title number, track number (while playing back). Press ENTER to enter the number.
REC MODE:	Select the recording mode.
REC PAUSE:	Enter recording pause. To start recording, press ►.
DISPLAY:	Change the display information.

Only for DVD player operations:

fs/Rate:	Show the sampling frequency.
TITLE/GROUP:	Make the numeric buttons work for selecting the title/group number.
ZOOM:	Zoom in and out.
1 – 10, 0, +10:	Select a chapter/title number, track number, menu item, etc.
DVD/CARD:	Select the disc or memory card to play. (Only for a DVD player incorporated with memory card slots.)
DIMMER:	Change the display brightness.
THUMBNAIL:	Show the thumbnail screen for JPEG discs.
SLIDE:	Start the slide show playback for JPEG discs.
3D/S.EFFECT:	Apply the 3D effect.
PAGE:	Show browsable still pictures recorded on DVD-Audio discs.

If these buttons do not function normally, use the remote control supplied with your DVD recorder or DVD player. Refer also to the manuals supplied with the DVD recorder or DVD player for details.

Operating other manufacturers' products

By changing the transmittable signals, you can use the supplied remote control to operate other manufacturers' products.

- Refer also to the manuals supplied with the other products.
- To operate those components with the remote control, first you need to set the manufacturers' codes each for the CATV converter, DBS tuner, VCR, and TV.
- After replacing batteries of the remote control, set the manufacturers' codes again.

❑ Changing the transmittable signals for operating a TV

Set the mode selector to "AUDIO/TV/VCR/DBS."

1 **Press and hold TV ⏻/I.**

2 **Press TV.**

3 **Enter the manufacturer's code using buttons 1 – 9, and 0.**

See "Manufacturers' codes for TV" on the right.

4 **Release TV ⏻/I.**

Now, you can perform the following operations on the TV.

TV ⏻/I:	Turn on or off the TV.
TV VOL +/–:	Adjust the volume on the TV.
TV/VIDEO:	Change the input mode (either TV or VIDEO).

After pressing TV, you can perform the following operations on the TV.

CHANNEL +/–:	Change the channel numbers.
1 – 9, 0, 100+ (+10):	Select the channel numbers.

See the instructions supplied with the TV for details.

5 **Try to operate your TV by pressing TV ⏻/I.**

When your TV turns on or off, you have entered the correct code.

If more than one code is listed for your brand of TV, try each one until the correct one is entered.

Manufacturers' codes for TV

Manufacturer	Codes
JVC	01
Akai	02
Bell+Howell	03
Centurion	04
Coronad	05
Daewoo	06, 07, 08
Emerson	09, 10, 11, 12, 13
Fisher	14
GE•Pana	15, 16
GE•RCA	17
Gold Star	18, 19
Hitachi	20, 21
KTV	22, 23
Magnavox	24
Marantz	25
Mitsubishi	25
Panasonic	26, 27
Philips	24
Pioneer	28
Proscan	29
Quasar	30
Radioshack	31
RCA	02, 17, 32, 33, 34, 35
Samsung	36, 37
Sanyo	14
Sears	38
Sharp	39
Sony	40
Symphonic	41, 42
Toshiba	38
Zenith	43, 44

Initial setting: 01

Manufacturers' codes are subject to change without notice. If they are changed, this remote control cannot operate the equipment.

❑ Changing the transmittable signals for operating a VCR

Set the mode selector to "AUDIO/TV/VCR/DBS."

1 **Press and hold VCR ⏻/I.**

2 **Press VCR.**

3 **Enter the manufacturer's code using buttons 1 – 9, and 0.**

See "Manufacturers' codes for VCR" on the right.

4 **Release VCR ⏻/I.**

Now, you can perform the following operation on the VCR.

VCR ⏻/I:	Turn on or off the VCR.

After pressing VCR, you can perform the following operations on the VCR.

CHANNEL +/–:	Change the channel numbers on the VCR.
1 – 9, 0:	Select the channel numbers on the VCR.
►:	Start playback.
■:	Stop playback.
II:	Pause playback.
►►:	Fast-wind a tape.
◄◄:	Rewind a tape.

See the instructions supplied with the VCR for details.

5 **Try to operate your VCR by pressing VCR ⏻/I.**

When your VCR turns on or off, you have entered the correct code.

If more than one code is listed for your brand of VCR, try each one until the correct one is entered.

Manufacturers' codes for VCR

Manufacturer	Codes
JVC	01, 02, 03, 04
Aiwa	05
Akai	06, 07, 08
Bell+Howell	09
Daewoo	10
Emerson	11, 12, 13, 14, 15
Fisher	16, 17, 18, 19
G.E.	20, 21
Go Video	22
Gold Star	23
Go-Video A	24
Go-Video B	25
Hitachi	20, 26
Magnavox	27, 28, 29
Mitsubishi	30, 31, 32, 33
NEC	34, 35
Panasonic	36, 37
Philips	27
RCA	38
Samsung	39, 40, 41
Sanyo	16, 17, 18, 19
Scott	42
Sharp	43, 44
Shintom	45
Sony	46, 47, 48, 49, 50, 51
Symphonic	52
Teknica	53, 54
Toshiba	55
Zenith	56

Initial setting: 01

Manufacturers' codes are subject to change without notice. If they are changed, this remote control cannot operate the equipment.

❑ Changing the transmittable signals for operating a CATV converter or DBS tuner

Set the mode selector to "AUDIO/TV/VCR/DBS."

1 **Press and hold DBS ⏻/I.**

2 **Press DBS.**

3 **Enter the manufacturer's code using buttons 1 – 9, and 0.**

See "Manufacturers' codes for CATV converter" or "Manufacturers' codes for DBS tuner" below.

4 **Release DBS ⏻/I.**

Now, you can perform the following operation on the CATV converter or DBS tuner.

DBS ⏻/I:	Turn on or off the CATV converter or DBS tuner.

After pressing DBS, you can perform the following operations on the CATV converter or DBS tuner.

CHANNEL +/–:	Change the channel numbers on the CATV converter or DBS tuner.
1 – 9, 0:	Select the channel numbers on the CATV converter or DBS tuner.

See the instructions supplied with the CATV converter or DBS tuner for details.

5 **Try to operate your CATV converter or DBS tuner by pressing DBS ⏻/I.**

When your CATV converter or DBS tuner turns on or off, you have entered the correct code.

If more than one code is listed for your brand of CATV converter or DBS tuner, try each one until the correct one is entered.

Manufacturers' codes for CATV converter

Manufacturer	Codes
G.I.	01
Gemini	02
Hamlin	03, 04, 05, 06
Jerrold	07, 08, 09, 10, 11, 12, 13, 14, 15
Macom	16, 17, 18
Magnavox	19
Oak	20, 21, 22
Panasonic	23, 24
Philips	25, 26, 27, 28, 29, 30
Pioneer	31, 32
S. Atlanta	33, 34, 35
Samsung	36
Tocom	37
Zenith	38, 39

Manufacturers' codes for DBS tuner

Manufacturer	Codes
Echostar	40
G.I.	41
Hitachi	42
Hughes	43
Panasonic	44
Primestar	45
RCA	46
Sony	47
Toshiba	48

Initial setting: 01

❑ Changing the transmittable signals for operating a DVD player

Set the mode selector to "DVD."

1 **Press and hold DVR/DVD ⏻/I.**

2 **Press DVR/DVD.**

3 **Enter the manufacturer's code using buttons 1 – 9, and 0.**

See "Manufacturers' codes for DVD player" below.

4 **Release DVR/DVD ⏻/I.**

Now, you can perform the following operation on the DVD player.

DVR/DVD ⏻/I:	Turn on or off the DVD player.
►:	Start playback.
◄◄:	Retun to the beginning of the current chapter (or fast-forward for some models).
►►:	Skip to the beginning of the next chapter (or fast-reverse for some models).
■:	Stop playback.
II:	Pause playback.
MENU:	Display the menu recorded on DVD VIDEO discs.
▲/▼/►/◄:	Select an item on the menu screen.
ENTER:	Enter the selected item.
1 – 9, 0:	Select the chapter number.

See the instructions supplied with the DVD player for details.

5 **Try to operate your DVD player by pressing DVR/DVD ⏻/I.**

When your DVD player turns on or off, you have entered the correct code.

If more than one code is listed for your brand of DVD player, try each one until the correct one is entered.

Manufacturers' codes for DVD player

Manufacturer	Codes
JVC	01
Hitachi	12
Kenwood	05, 08
Mitsubishi	10
Onkyo	15, 16
Panasonic	04
Philips	07
Pioneer	03
Samsung	14
Sony	02
Toshiba	06
Yamaha	09

Initial setting: 01

NOTE

You cannot use this remote control to operate other manufacturers' DVD recorder.

Manufacturers' codes are subject to change without notice. If they are changed, this remote control cannot operate the equipment.

Troubleshooting

Use this chart to help you solve daily operational problems. If there are any problems you cannot solve, contact your JVC's service center.

	PROBLEM	POSSIBLE CAUSE	SOLUTION
Power	The power does not come on.	The power cord is not plugged in.	Plug the power cord into an AC outlet.
	The receiver turns off (enters standby mode).	Speakers are overloaded because of high volume.	1. Stop the playback source. 2. Turn on the receiver again, then turn the volume down.
		Speakers are overloaded because of a short circuit at the speaker terminals.	Check the speaker wiring. If speaker wiring is not short-circuited, contact your dealer.
		The receiver is overloaded because of a high voltage.	Consult your dealer after unplugging the power cord.
	"OVER HEAT" flashes on the display, then the receiver turns off.	The receiver is overloaded because of high volume or long time usage.	Turn on the receiver again. If the receiver turns off soon, consult your dealer after unplugging the power cord.
Sound	No sound from speakers.	Speaker signal cables are not connected.	Check speaker wiring, then reconnect if necessary (see page 6) after unplugging the power cord.
		Connections are incorrect.	Check the audio connections (see pages 7 to 11) after unplugging the power cord.
		An incorrect source is selected.	Select the correct source.
		Muting is activated.	Press MUTING to cancel the mute (see page 15).
		An incorrect input mode (analog or digital) is selected.	Select the correct input mode (analog or digital).
		TV Direct is activated.	Deactivate TV Direct (see page 14).
	Sound from one speaker only.	Speaker signal cables are not connected properly.	Check speaker wiring and reconnect if necessary (see page 6) after unplugging the power cord.
	Bass sound is reinforced too much when listening in stereo.	Appropriate bass level is not selected.	Adjust audio position level (see page 14).
	Sounds are intermittently distorted by the outside noise such as a lightning discharge.	When you use the digital coaxial connection, the sounds may be intermittently distorted by the outside noise such as a lightning discharge but the sound will be restored automatically.	This is not a malfunction.
Remote control	Remote control does not operate as you intend.	The remote control is not ready for your intended operation.	Set the mode selector correctly, then press the corresponding source selecting button or SOUND before operation.
	Remote control does not work.	There is an obstruction hiding the remote sensor on the receiver.	Remove the obstruction.
		Batteries are weak.	Replace batteries.
		The mode selector is set to the incorrect position.	Set the mode selector to the proper position.
	Buttons cannot be used.	TV Direct is activated.	Deactivate TV Direct (see page 14).
Tuner	Continuous hiss or buzzing during FM reception.	Incoming signal is too weak.	Connect an outdoor FM antenna or contact your dealer.
		The station is too far away.	Select another station.
		The wrong antenna is being used.	Check with your dealer to be sure you have the correct antenna.
		Antennas are not connected properly.	Check the connections.
	Occasional cracking noise during FM reception.	Ignition noise from automobiles.	Move the antenna farther from automobile traffic.

Specifications

Designs and specifications are subject to change without notice.

Amplifier

Output Power

At stereo operation:

Front channels: **100 W per channel, min. RMS, both channels driven into 6 Ω at 40 Hz to 20 kHz with no more than 0.8% total harmonic distortion.**

At surround operation:

Front channels: 100 W per channel, min. RMS, driven into 6 Ω at 1 kHz with no more than 0.8% total harmonic distortion.

Center channel: 100 W, min. RMS, driven into 6 Ω at 1 kHz, with no more than 0.8% total harmonic distortion.

Surround channels: 100 W per channel, min. RMS, driven into 6 Ω at 1 kHz, with no more than 0.8% total harmonic distortion.

Surround back channel: 100 W, min. RMS, driven into 6 Ω at 1 kHz, with no more than 0.8% total harmonic distortion.

Audio

Audio Input Sensitivity/Impedance:

DVR/DVD (DVD MULTI), VCR, DBS, TV: 330 mV/47 kΩ

Audio Input (DIGITAL IN)*:

Coaxial: DIGITAL IN 1(DVR/DVD): 0.5 V(p-p)/75 Ω

Optical: DIGITAL IN 2(DBS), 3(VCR): –21 dBm to –15 dBm (660 nm ±30 nm)

* Corresponding to Linear PCM, Dolby Digital, and DTS (with sampling frequency—32 kHz, 44.1 kHz, 48 kHz).

Audio Output Level:

DVR, VCR, MONITOR OUT: 330 mV

Signal-to-Noise Ratio ('66 IHF/DIN): 80 dB/62 dB

Frequency Response (6 Ω): 20 Hz to 20 kHz (±1 dB)

Bass Boost: +4 dB ±1 dB at 100 Hz

Equalization (at DSP operation):

Center frequency: 63 Hz, 250 Hz, 1 kHz, 4 kHz, 16 kHz

Control range: ±8 dB

Video

Video Input Sensitivity/Impedance:

Composite video: DVR/DVD, VCR, DBS: 1 V(p-p)/75 Ω

S-video: DVR/DVD, VCR, DBS:

Y (luminance): 1 V(p-p)/75 Ω

C (chrominance, burst): 0.286 V(p-p)/75 Ω

Component: DVR/DVD, VCR:

Y (luminance): 1 V(p-p)/75 Ω

P_B, P_R: 0.7 V(p-p)/75 Ω

Video Output Level/Impedance:

Composite video: DVR, VCR, MONITOR OUT: 1 V(p-p)/75 Ω

S-video: DVR, VCR, MONITOR OUT:

Y (luminance): 1 V(p-p)/75 Ω

C (chrominance, burst): 0.286 V(p-p)/75 Ω

Component: MONITOR OUT:

Y (luminance): 1 V(p-p)/75 Ω

P_B, P_R: 0.7 V(p-p)/75 Ω

Synchronization: Negative

FM tuner (IHF)

Tuning Range: 87.5 MHz to 108.0 MHz

Usable Sensitivity:

Monaural: 12.8 dBf (1.2 µV/75 Ω)

50 dB Quieting Sensitivity:

Monaural: 16.0 dBf (1.7 µV/75 Ω)

Stereo: 37.5 dBf (20.5 µV/75 Ω)

Stereo Separation at REC OUT: 35 dB at 1 kHz

AM tuner

Tuning Range: 530 kHz to 1 710 kHz

General

Power Requirements: AC 120 V~, 60 Hz

Power Consumption: 120 W/160 VA (at operation)
2 W (in standby mode)

Dimensions (W x H x D): 435 mm x 70 mm x 329.5 mm

Mass: 6.3 kg

RX-F10S

HOME THEATER RECEIVER

VICTOR COMPANY OF JAPAN, LIMITED

EN, FR

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